RAILROAD MAGAZINE

JANUARY, 25¢

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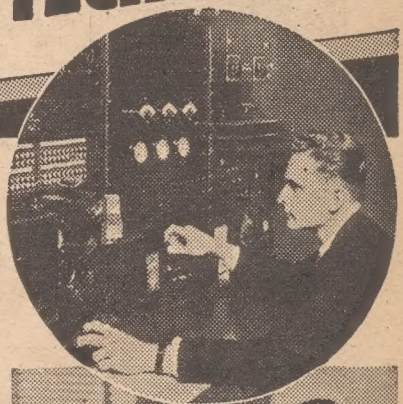

I Trained These Men

$200 a Month in Own Business
"For several years I have been in business for myself making around $200 a month. Business has steadily increased." ARLE J. FROEHNER, 300 W. Texas Ave., Goose Creek, Texas.

$5 to $10 Week in Spare Time
"I am engaged in spare time Radio work. I average from $5 to $10 a week. I often wished that I had enrolled sooner because all this extra money sure does come in handy." THEODORE K. DuBREE, Horsham, Pa.

1st Lieutenant in Signal Corps
"I cannot divulge any information as to my type of work, but I can say that N.R.I. training is certainly coming in mighty handy these days." RICHARD W. ANDERSON, (Address omitted for military reasons.)

Mail the Coupon for a FREE lesson from my Radio Course. It shows how N.R.I. trains you for Radio at home in spare time. And with this Sample Lesson I'll send my 64-page illustrated book, "Win Rich Rewards in Radio." It describes many fascinating jobs Radio offers, tells how you can train for them at home in spare time; how you get practical experience by building real Radio Circuits with SIX BIG KITS OF RADIO PARTS I SEND!

More Radio Technicians Now Make $50 a Week Than Ever Before

There's a big shortage today of capable Radio Technicians and Operators. Fixing Radios pays better now than for years. With new Radios out of production, fixing old sets adds greatly to the number of servicing jobs.

Broadcasting Stations, Aviation and Police Radio, and other Radio branches are scrambling for Operators and Technicians. Radio Manufacturers, now working on Government orders for Radio equipment, employ trained men. The Government too needs hundreds of competent civilian and enlisted Radio men and women.

Many Beginners Soon Make $5, $10 a Week EXTRA in Spare Time

The day you enroll for my Course I start sending you EXTRA MONEY JOB SHEETS that show you how to earn EXTRA money fixing Radios. Many make $5, $10 a week EXTRA in spare time within a few months after enrolling.

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Think of the NEW jobs that Television, Frequency Modulation, Electronics, and other Radio developments will open after the war! I will train you to be ready to cash in when victory releases the amazing wartime Radio developments for peacetime uses!

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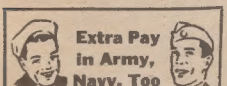
The opportunity the war has given beginners to get started in Radio may never be repeated. So take the first step at once. Get my FREE Lesson and 64-page, illustrated book. No obligation—no salesman will call. Just mail coupon in an envelope or paste it on a penny postal.—**J. E. SMITH, President, Dept. 4AS9, National Radio Institute, Washington 9, D. C.**

TRAINING MEN FOR VITAL RADIO JOBS

BROADCASTING STATIONS (top illustration) employ Radio Technicians as operators, installation, maintenance men and in other fascinating, steady, well-paying, technical jobs. FIXING RADIO SETS (bottom illustration), a booming field today, pays many Radio Technicians $50 a week. Others hold their regular jobs and make $5 to $10 a week EXTRA fixing Radios in spare time.



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RAILROAD MAGAZINE

Originally Railroad Man's Magazine, founded 1906

January, 1943 Vol. 35, No. 2 25 Cents

ILLUSTRATED FEATURES

In the High Sierras *(Southern Pacific)*.....*Frederick Blakeslee* Front Cover
The G. Y. M.....*"Haywire Mac"* 10
Cajon Pass *(Photographs)*..... 66
New York Locomotive Works..... 104

TRUE TALES OF THE RAILS

My First Run.....*Charles W. Tyler* 78
Track Foreman.....*William J. Van Winkle* 99
Woman Op.....*Sue R. Morehead* 88

FICTION

The Hobo Local.....*Clifford Funkhouser* 23
Burlington Hill *(Historical Novelette)*.....*Ed Samples* 46

SHORT HAULS

Less Than Carload Lots..... 6
When Winter Comes..... 8
Back in the Days.....*Harry C. Temple* 22
Along the Iron Pike *(Odd Picture-Facts)*.....*Joe Easley* 32
Locomotive of the Month *(St. Louis-San Francisco 4500)*..... 44

DEPARTMENTS

Light of the Lantern *(Brazing Speeds Up Cylinder Repairs)*..... 34
Electric Lines *(Pacific Electric)*.....*Stephen D. Maguire* 92
On the Spot *(The Reader's Viewpoint)*..... 112
Railroad Camera Club *(The Switch List)*..... 141
Model Trading Post..... 143

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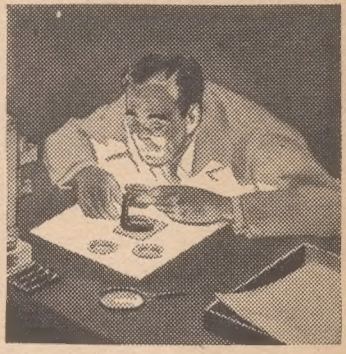
Who Killed Him? *Could you have solved* THIS MYSTERY?

Wealthy Henry Jason lived in his big home alone except for a maid, a gardener, a chauffeur and a housekeeper. Noted for his philanthropies, he had no known enemies. The maid reported stumbling over Jason's body when she started into the library to do some dusting. She told the police Jason had had three callers during the morning, his lawyer, a nephew, and a stranger. An autopsy showed poisoning as the cause of death. Who was the poisoner?



There was a single clue . . . a finger print on a glass

One of these finger prints identifies slayer!

Who Was Guilty?

1. Nephew
2. Attorney
3. Gardener
4. Maid
5. Housekeeper
6. Chauffeur
7. Stranger
8. The Slayer

CAN YOU POINT OUT THE KILLER?

The police found the stranger to be a philanthropic associate of the murdered man who had no objection to being finger printed. Finger prints of other suspects were obtained without the necessity of making routine prints. The Bureau of Identification at police headquarters ordered the arrest of the slayer immediately after checking the several index finger prints with that on the drinking glass. Study and compare prints above. You should be able to point out the murderer. Can you?

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Who Was Guilty? Put cross in square above

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Less Than Carload Lots

TAPPING out his first telegraph message of the day, one day last October, Wm. H. O'Brien, Sr., Pere Marquette agent and op at Coloma, Mich., was surprised to learn it was addressed to his wife and was stunned when the dots and dashes revealed that their son Bill, a paratrooper, had been killed in action in North Africa on July 12th. The veteran brass pounder delivered the message in person. This dramatic incident reminds us of a somewhat similar episode in Saroyan's book and movie, *The Human Comedy.*

* * *

"BIG OX," a term sometimes applied to conductors, has no significance except as a variation of "big O," the first initial in Order of Railway Conductors. It means that the man is an ORC member. However, the nickname could have been applied in its literal sense to Tim Keeler, skipper on the old Housatonic & Northern (now New Haven). The engine on Tim's one-car train broke down March 27th, 1871, enroute from Brookfield Jct., to Danbury, Conn. Tim was resourceful. Instead of leaving his passengers stranded, he hired two yoke of oxen from a nearby farmer, Ames Martin, and the sturdy animals pulled his coach back to Danbury.

* * *

EMERGENCY. A dismal thought came to Mrs. Ben Foster the other day as the Grand Trunk-Canadian National train she had just boarded was pulling out of Muskegon, Mich., bound for Detroit. The lady remembered having used the electric iron in her home, 1528 Glade St., Muskegon Heights, and wondered if she had left the power on. Panicky, she asked Conductor W. L. Washburn to stop the train and back up to Muskegon. This he could not do, but he wrote a message and tossed it off to a section gang working along the line. The king snipe phoned to A. J. Speiss, the Grand Trunk agent at Muskegon. In turn Speiss called the Fire Department. A fireman, sent over to the Foster house, found the iron had already burned its way through the board, but he prevented serious damage. Conductor Washburn was officially commended for quick wit in handling an emergency.

TRAVELING via the Atchison, Topeka & Sante Fe Railway to the three cities in its name is an 823-mile journey taking 46½ hours, on three different types of trains and equipment, with two stops and long waits. The information comes from A. R. Wildhagen of Champaign, Ill. According to the Official Guide, the only AT&SF train from Atchison, Kan., to Topeka, Kan., is a motor leaving at 8.35 a.m. and arriving at 10.15 a.m., a 51-mile run. The AT&SF passenger has more than 12 hours of sight-seeing in Topeka, for he cannot leave on the next leg of his trip until the swanky, extra-fare Chief picks him up at 11.30 p.m. He rides the Chief for 754 miles, reaching Lamy, N.M., at 2 p.m., next day. The Chief is one of only two trains stopping at this AT&SF rail junction. The only train taking you from there to Santa Fe, the state capital, 18 miles away, is a mixed train leaving at 6 o'clock the next morning and arriving at 7.10 a.m. When you finally get there you will have covered (theoretically but not actually) the entire AT&SF system.

* * *

FLOOD recently washed out several bridges and a few miles of track on the B&O near St. Clairsville, O. Five cars, three tanks and several boxcars were cut off. The cars were needed so badly by the company that, instead of waiting for the road to be rebuilt, they hired a large trucking company from Wheeling, W. Va., to haul the cars by truck from St. Clairsville to Bridgeport, about 15 miles. Only one car could be moved a day and the cost is said to have been $200 per car. All traffic on the thoroughfare stopped to view the curiosity. Millard Gress, Box 88, Bellaire, O., who sent us the item, asks, "Is this the first time a truck hauled railroad cars?"

* * *

TWO-CENT CHECK. Most of us lose no time in cashing pay checks; but John W. Staples, a former Louisville & Nashville employe who worked at San Antonio, Texas, had an L&N order for two cents, dated July 31, 1917, which he said he'd never cash. It covers back pay accrued under the Adamson Law during the month of April, 1917.

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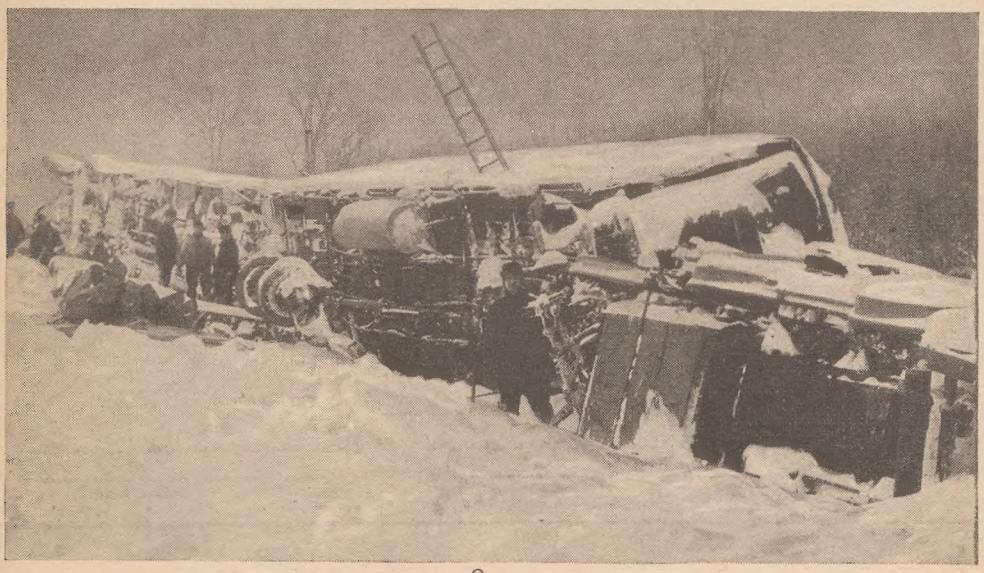
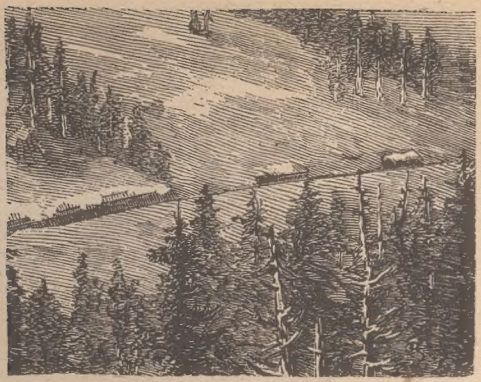
When Winter Comes





WINTER adds to operating costs, especially bills for coal, snow removal and wire destruction. Our pictures show Central Pacific snowsheds in the 1870s, a ***Burlington Zephyr*** fighting a blizzard, the two ends of a snowplow train on the Fonda, Johnston & Gloversville, and a wreck we cannot identify

The G. Y. M.

For 24 Hours a Day the General Yardmaster Has Full Charge of the Railroad's Most Vulnerable Spot

THE YARDMASTER is an important figure in the complicated scheme of railroad operation. All freight traffic originates in some yard and is passed along through a series of other classification and "passing" yards until it finally reaches a terminal yard. There the battered, weary boxcars are spotted on the receiving spur of the ultimate consignee. Some Yardmaster is responsible for each move.

Yardmasters are in full charge of the most vital—and most vulnerable—spots on anybody's railroad system. For proof you need only refer to your daily newspaper. The successful bombing of important railroad yards in Germany or occupied France is given headline precedence over much of the news that is close to home.

A few months ago every General Yardmaster of the Espee on the Pacific Coast received a message which read somewhat as follows: "Please advise number of empty 50-ton capacity flatcars immediately available. Also number and destination of loaded flats. State probable time

YARDMASTER is responsible for movement and final disposition of all cars entering his territory. Only modern means of communication enables him to control a big yard, like this Norfolk & Western tidewater terminal

By "HAYWIRE MAC"

(Harry K. McClintock)

in which same may be made available by delivery to consignee or transfer of load, if feasible, to other type car."

The reason? Our War Department had decided to send an Expeditionary Force to some point overseas. One of the little jobs assigned to the Southern Pacific was that of digging up twelve hundred empty flatcars, on less than twenty-four hours notice!

In times like the present, railroads don't argue with the Army. They simply give the Army what it wants. Flatcars are not produced out of a hat like the rabbits of the stage magician. And this Western country, where there are no steel mills, fabricating plants and the like, doesn't use many flatcars in normal times. Nevertheless, the Army got its flats. And a certain motorized unit moved out of camp training on the appointed hour and proceeded, by the most direct route, to Port Jumpoff where ships, produced by even more fabulous methods, were waiting for them.

The key man in this procedure was the Yardmaster. He is, today as always, the unruffled, poker-faced, miracle man of railroading. He is—in experience, if not in years—an old-timer. The Y.M. has figured his way out of a thousand jams before he ever moved up into the brass-hat classification. He has seen yards tied up by main-line wrecks, by blizzard, flood, payday, and switch-shanty

DITTO MACHINE turns out copies of switch lists in a Louisville & Nashville office, speeding classification

MUDHOP must keep accurate record of reception, handling, and disposal of all cars. This L&N yard clerk chalks up a destination

strikes. Nothing really surprises this official, for he is fully aware that "anything can happen."

Let's take a look at the Yardmaster. He doesn't sleep with a pair of rubber boots at his bedside, like a city fireman, but there is always a telephone within easy reach. Usually he has one complete outfit of rain clothes in his closet at home and another in the locker of his private office. If he fares forth in the evening to a lodge meeting, a movie, or a stag party given by an important shipper, there is always someone at his home address who knows where he can be reached immediately.

The G.Y.M. is in full and complete charge of his yard twenty-four hours of each day, but is actually on the job from seven a.m. until seven p.m. During the dark hours his place is taken by an equally competent railroader, the Assistant (or Night) General Yardmaster.

At various strategic points in the "garden" there are minor Assistant Yardmasters—"dingers" to you—each of whom has supervision over a specified territory and all switch engines working therein. There is also a hard-working corps of "mudhops" (yard clerks) whose duty it is to keep an accurate record of the reception, handling and final disposition of every car, loaded or empty, entering the garden.

The combined checks of the mudhops and dingers form what is called the turnover. The G.Y.M., going on shift, can tell almost instantly what the score is. Routine operations such as breaking up incoming trains, mak-

ing up outbound trains, switching freight houses, team tracks, industrial spurs, and all such matters are handled by engine crews regularly assigned to specified districts in the yard.

Given a sufficient number of competent carhands as dingers, engine foremen, and helpers, plus adequate motive power to move his outbound tonnage, the G.Y.M. has little to worry about. Traffic flows smoothly through his yard, everything is lovely, and the well known goose hangs high. But, alas, in this perverted and pig-iron world, things do not always run smoothly. If they did, almost anybody could be a G.Y.M.

A shortage of engines, train crews, or yardmen; congestion of road traffic due to wrecks, floods, landslides, blizzards, or bum dispatching—any one of fifty causes—is likely to place your G.Y.M. in the unfortunate position of having more boxcars dumped into his garden than he can get rid of. At such times he is definitely in a jam, in more ways than one. His yard, normally a traffic bottleneck, becomes the dead center of a "blockade." The bad news spreads, almost instantaneously, from the smoky switch shanty to the General Manager's plush-lined hideout.

What, under the circumstances, does the harried G.Y.M. do? I'll tell you a case that I know.

SWITCHING ENGINE, often referred to as a "goat," marshals cars in a "flat" yard

CAR KNOCKER lifts lid of journal box on N&W car to check on supply of waste and make sure fibers aren't caught between journal and bearing. Equipment for high-speed freight runs requires rigid inspection

BACK in 1906 a man named Luther E. Jenkins was holding down the not too onerous job of General Yardmaster for the Rock Island at Coffeyville, Kansas. As jobs go, he was "sitting pretty." Then unexpectedly a former Rock Island official, R. E. Cahill, stepped off a train one day and dropped an exceedingly hot potato right into Luther's lap.

Cahill was a Division Superintendent on the Iron Mountain. His yard at McGhee, Arkansas, was congested so badly that several cars of dressed beef had been lost in the shuffle, had run out of ice and had been spoiled. The odor emanating from them sounded a sort of olfactory keynote as to conditions in McGhee. Cahill needed a new G.Y.M. For reasons of his own, he didn't want to bother Iron Mountain officials about the matter. Accordingly, he hopped a train, consulted certain of his old-time friends among the Rock Island official family, and got their consent to his borrowing Luther Jenkins for the emergency.

Cahill's line of talk sold Luther the idea of taking charge of one high-caliber headache. So Luther packed his toothbrush and a couple of clean shirts, grabbed a train, and alighted in McGhee without advance publicity. A quick survey of the situation sent him to the long-distance phone, on which he succeeded in contacting Cahill—and that was no mean feat.

"I'll take charge," said Luther, "but on *my* terms."

"What terms?"

"Appoint me temporary trainmaster at McGhee. Give me full power to act and I'll straighten out this mess."

"What's the matter with you stepping in as General Yardmaster?" queried Cahill.

"There's nothing wrong with the man you have, except that you didn't give him the right kind of backing."

"The guy fell down, didn't he?" The Super's voice was flying storm signals.

YARDS AT McGHEE, ARK., as they look today to a Missouri Pacific camera man. The Iron Mountain Railroad (now part of the MoP) cleared up a serious blockade here in 1906 by borrowing a General Yardmaster from the Rock Island

UNSCHEDULED consignments can turn the "garden" into an emergency landing field or an inland lake, as L&N's DeCoursey, Ky., yardmen know. But the G.Y.M. must keep the trains moving, come hell or high water

"Do I get what I ask," Luther fired back, "or do I grab the next rattler out of this madhouse?"

"You win, Jenkins. Your official appointment will be on the wire within ten minutes. Now, will you get busy?"

Luther had been phoning from the hotel. After this conversation he strolled out into the bar-room of the hotel where the G.Y.M. of McGhee was downing numerous flagons of red licker in an effort to stifle the memory of the beating he was taking.

"You've come down here to take my place," he accused the newcomer with a sob in his manly voice.

"I wouldn't have your job as a gift," Luther retorted. "I'm here to help you. Now let's get over to the yard office and get things started."

Jenkins' first unpleasant discovery was that there was no such thing as an accurate "check" of the yard in existence. Every track was filled to the limit, but nobody knew what with. So he sent the callboy out to round up all of the night mudhops, plus a couple of extra switchmen. These fellows, together with the day car clerks, he set to the job of grabbing the initial, number, destination, and contents, of every car in sight.

Meanwhile, he checked with the Master Maniac on the available power and with the Chief Dispatcher on consists of trains already headed his way. Some conductors were given telegraphic orders to set out all empties and dead loads at sidings seldom used for meeting and passing trains.

About fifty per cent of the switchmen at McGhee were Negroes. There was a ruling on the Iron Mountain in those days that only white men

HUMP RIDERS ease boxes and reefers down ladder tracks, such as these on the Pennsy, to couple into like-destined cars

could be used as engine foremen or yard conductors. But Luther wouldn't let a little obstacle like that stop him. He shook up the crew board and placed several colored switchmen as temporary engine foremen, each with two helpers of his own race. This he did because not all of the white engine foremen were "hitting the ball."

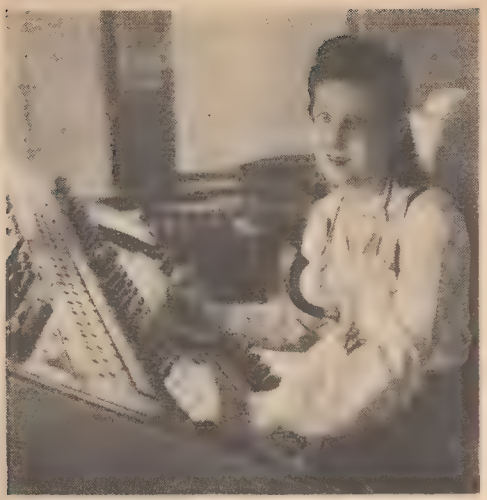
As fast as track checks were available, yard goats were put to work making up trains, giving perishable, or "hot" loads preference. Within twenty-four hours there was a sizeable hole in the blockade, and within four or five days the situation was definitely licked.

The G.Y.M. retained his job and Luther Jenkins went back to Coffeyville, with the heartfelt thanks of Superintendent Cahill.

MOST blockades in intermediate or "passing" yards can be handled the same way. The cause of a tieup is usually the lack of sufficient car clerks to cover the garden plus an insufficient number of crews to do the switching. Hiring of a few new mudhops and the addition of a couple of switching crews generally effects a permanent cure.

An entirely different setup confronted James J. Jordan on the Espee back in 1917. Jordan was Superintendent of the Sacramento Division and had just been appointed Superintendent of Terminals at San Francisco. The yard was a madhouse. More than fifteen hundred "hold" loads had been stashed away wherever there was track room. Nearly all of these were export loads destined to points on the other side of the Pacific. All storage tracks at Mission Bay and Bay Shore yards were loaded with them, as well as a passing track or two at South San Francisco, Baden, and the old Tanforan racetrack. About half of the track room at Roseville, the Espee's most vital passing yard, was blocked by fourteen hundred more boxcars of the same kind.

San Francisco was, of course, the end of the railroad. Every car that arrived had to be delivered to its consignee on the team track, industrial spur or harbor pier. Those go-



ALICE McMINAMIN, switch tender in PRR yards, Philadelphia

ing to the pier were routed over the State Belt Railway, busiest piece of trackage on the West Coast, which provided rail service for the entire San Francisco waterfront.

Having no storage room, the State Belt emphatically refused to accept cars until ships to receive the contents thereof had docked. This left the Southern Pacific holding the bag —and the boxcars. There was a shortage of Espee mudhops, yard goats and crews. Track checks were either inaccurate or non-existent. Prior to Jimmy Jordan's appointment, there had been four incumbents of the General Yardmaster's chair in something like eight months.

Jordan already had a reputation as a "blockade buster," but he really won his golden spurs and cross, with palms, in San Francisco that winter. He had arrived at Officialdom the hard way, having started his career on the footboard of a yard goat in Sacramento. He knew switchmen and liked 'em. He had a reputation for being ready to "go to bat" for any of his men. I firmly believe that he could get more work, with a minimum of squawking, out of a bunch of hard-boiled carhands than any other SP official.

To line up competent men, he "squared" the badly battered personal records of a flock of old-time boomers. He demanded—and got—more trackage, more engines, more dingers and more mudhops. When anyone in the General Office demurred or attempted to block him, Jordan grabbed such recalcitrant by the arm and waltzed him down into the yard, where the boxcars abounded and where actual conditions, not theories, governed the setup.

Well, he licked the blockade. And in the present edition of World War there hasn't been any repetition of it around San Francisco. James J. Jordan is now Superintendent of the Coast Division. And as Super of the State Belt Railway we find "Nick" Begley, another competent railroader with whom I have shared a footboard on more than one tough shift.

The men and equipment for the first American Expeditionary Force of the Pacific have been in Australia, New Guinea, the Solomons, and other island locations for many months. Therefore, I do not feel that any military secrets will be divulged when I state that during the embarcation of this force, the Southern Pacific delivered—and the State Belt shuttled to the Army piers—a full-sized passenger train every fifteen minutes!

American railroads have had the greatest transportation problem in history thrown at them and have come through magnificently. I haven't heard the least whisper of change from private to Government control because of any failure on their part. The G.Y.M. of every division and

terminal yard in the States and Canada has been right there on the receiving end of it all. He may chew his cigar to tatters, but he handles it.

AND now I come to an incident that befell when I held down my first, and almost my only, job as Night G.Y.M. Said occurrence might be subtitled, "The Mystery of the Disappearing Crummy."

I was working the night engine at Orrville, Ohio, for the CA&C. This road crossed the Pittsburgh, Fort Wayne & Chicago at Orrville which was the freight division midway between Akron and Columbus. Both roads were part of the Pennsylvania Lines West, the "Fort Wayne" being the main Pennsy artery between Pittsburgh and Chicago.

The CA&C roundhouse and the westbound transfer were located north of the railroad crossing while the eastbound transfer, the freight house, and the train yard were on the south side. The train yard, paralleling the main line, consisted of some five tracks, each holding about forty-five cars. The switching was done on the "ladder" immediately in front of the yard office. At the other, or south, end the lead tapered off into a long siding. A telephone box stood on the pole nearest the switch so that crews heading in from the south could call the yard office and find out what track had been cleared for them.

My appointment as Night Yardmaster was due to the unexpected illness of "Spider" Heller, the incumbent. The senior switchman was a home boy with something like a year's experience around the boxcars. For the job of engine foreman I assigned a boomer named "Buster" Brown, an old pal who hadn't been in the employ of the CA&C for more than sixty days but with whom I had worked at several points in the West. A husky brakeman off the extra board, strictly a scissor-bill, completed the crew.

Buster was a top carhand. Unfortunately for me, he was also a darned good semi-pro ball player. He hadn't been in town a week before

WHERE "Haywire Mac" lost his caboose years ago: PRR Eastern Division yard at Orrsville, Ohio

he was on the lineup of the local team. I had been doing all right as Night G.Y.M. for almost a week, when a fateful Saturday rolled around and the Orrville nine was scheduled for a sort of grudge contest with Barberton on the latter team's home cow pasture.

Buster had promised me to lay off baseball for the time being and he worked Friday night. But you know how small towns are. His public was not to be denied—the Barberton battle was too urgent. Regretfully but firmly, he informed me on Saturday morning that he would certainly be too tired, and probably too drunk, to switch boxcars on Saturday night.

Buster made good on both counts, all right. He started the game at second base. Then he stepped in as relief pitcher when the two regular hurlers had been batted out of the box. Finally, he wound up by poling the apple clean out of the lot in the ninth inning, with the bases loaded and Barberton holding a lead.

Since, in the estimation of the fans, Buster Brown won the old ball game almost single-handed, the guys who had bet on Orrville pressed a share of their winnings into the receptive mitts of the boomer engine foreman. As a result, Buster was poured off the train, along with the rest of the jubilant throng, his pockets full of money and Buster unable to hit the depot platform with his hat.

I congratulated myself on having had an extra yardman deadheaded down from Akron. However, my congratulations were a bit premature.

DAYLIGHT engines after dark. Southern Pacific's San Francisco-Los Angeles speed queens stand on an Alhambra, Calif., servicing track for refueling

Mindful of the inexperience of the acting engine foreman, I stayed right with him during the early hours of the night. During that period he switched the freight house and pulled both transfer tracks, besides breaking up a drag out of Akron.

Before legging it downtown for my midnight repast, I instructed the brother to switch out a certain caboose, give same a good shot down into track 3, and tie up for beans. After supper I informed him that we would make up a northbound extra on top of the crummy, following which the boys could catch two or three hours' "spot" before completing the makeup of the two local freights that departed every morning at seven o'clock.

I then instructed the night clerk and the brass pounder that a northbound extra freight would arrive around 12:30 or one a.m. I told them that when the head brakeman of the said drag called up on the phone they should direct him to head in on track 2, the only remaining clear alley in the yard.

Back in the yard office around one o'clock, I ascertained that the drag had arrived. So I woke the recumbent switchmen, started them at the task of making up one northbound extra, and ordered a crew for same called for three a.m. After all of this effort of brain and tongue, I reared back in my swivel chair, with the brogans tastefully disposed on my desk, and went to sleep.

About 2:30 a.m. I was snatched from somnolence by an irate conductor. Backed by both brakemen, he was demanding to be informed as to the whereabouts of his caboose.

"Isn't it on track three?" I queried, knuckling my eyes.

"Naw, it ain't—nor any other hot-ham track in the yard," the conductor bellowed. "It ain't even on the hot-ham caboose track. We looked."

I STUMBLED out into the locker room where the three trusty members of the switch crew were snoring lustily on the benches, and shook my engine foreman into comparative consciousness.

"Where the hell," I inquired politely, "did you dizzy dopes put the crummy for that northbound extra?"

"Why—why," he mumbled, between yawns, "we put it on three, just like you said. And we made up the train right down the same alley."

"Then where the damnation is it now?" yelped the conductor. "I want you nitwits to understand that our lanterns, our workin' clothes, our cookin' gear and our beddin' are all in that buggy. And we ain't leavin' town without 'em!"

The next move was distinctly up to me. I roused the engine crew, headed the old kettle down the main line, and checked the south end of all tracks. No crummy! She wasn't on the caboose track, she wasn't on the transfer, she wasn't on the house track. Apparently she wasn't anywhere in the yard. She could not have drifted down the long siding and out onto the main, because there was a derailing switch that was connected with the main-stem gate by rod and bell crank.

I didn't dare call up the next crew. Even if the brothers that stood first out could not put in a "run-around" in that far-off time, I knew full well that the aggrieved conductor would be in the Super's office next morning, complete with crying towel and case history.

Then the phone rang. It was an interphone connecting the yard of-

fice, round house, dispatcher's office and depot. I picked up the receiver.

"Vot," inquired a voice with a strong foreign accent, "did you vant me to did wit' dis caboose?"

"You got a caboose?" I howled. "Who the hell are you—and where is the caboose?"

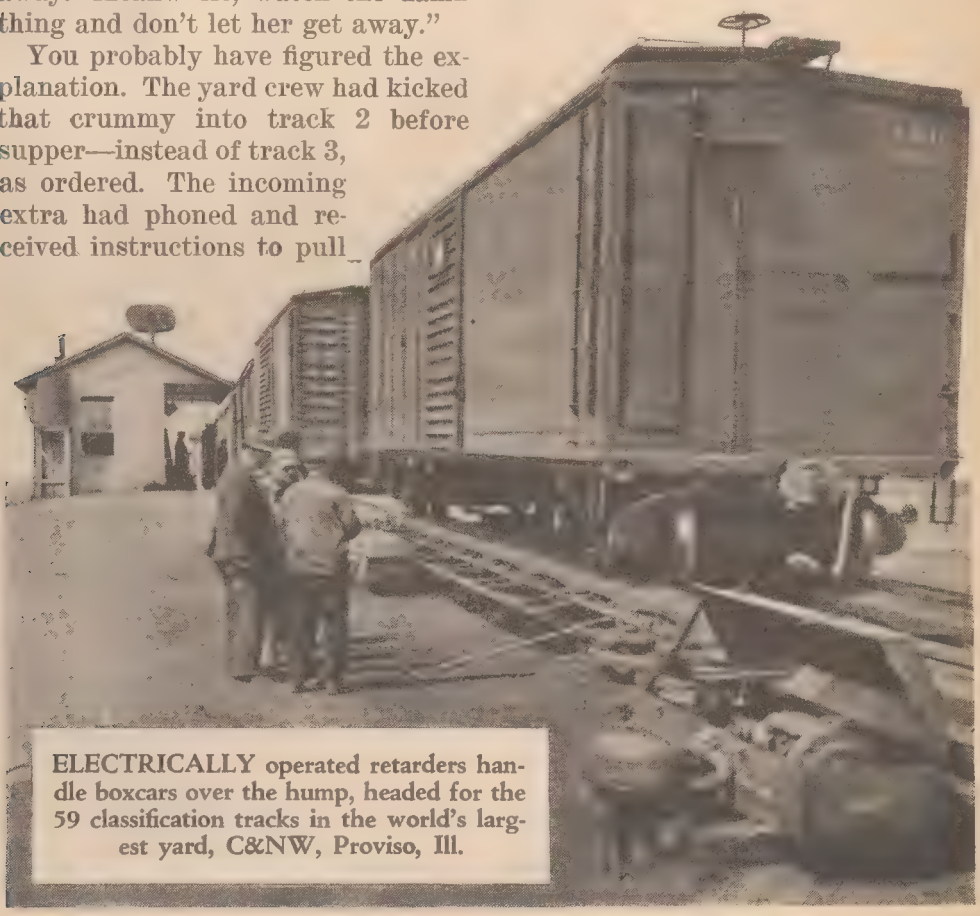
"Me, I'm Anton—at de ashes pit. A engine off a Columbus train comes by the clinker pit about two hours ago wit' a caboose coupled on de front of. Ve clean dot fire, fill dot sands box, dump vit' coal, fillem up vit' vater. Now ve vant put engine in dot house, but vot ve goin' to do vit dot caboose?"

"Hold everything!" I yelped. "The goat'll be over to grab her right away. Meanwhile, watch the damn thing and don't let her get away."

You probably have figured the explanation. The yard crew had kicked that crummy into track 2 before supper—instead of track 3, as ordered. The incoming extra had phoned and received instructions to pull into track 2, which was supposed to be clear. The head brakeman, irked at finding this stray caboose in his way, had simply coupled into the same, dragged his train to the top end and proceeded to the cinder pit with his engine, crummy and all.

After supper the yard crew had made up a train on track 3. As we didn't make the joints for the road crews in those days, the brothers hit the hay without realizing what had happened. They woke up willing to swear that they had put that buggy exactly where I told 'em to.

Such occurrences go a long way toward explaining the prevalence of gray in the underbrush on a Yardmaster's dome.



ELECTRICALLY operated retarders handle boxcars over the hump, headed for the 59 classification tracks in the world's largest yard, C&NW, Proviso, Ill.

BACK IN THE DAYS: "When all through the station not a creature was stirring, not even a relay or sounder"

The Hobo Local

"Hidebound" McGee Had His Own Reasons for Taking a Run Nobody Else Wanted

By CLIFFORD FUNKHOUSER
M-K-T Conductor

THE end of the pumpkin rush found "Hidebound" McGee thirty-one times out in Cactus, Arizona. If the board wasn't cut, he wouldn't get out before a week from next Thursday. The lanky boomer conductor was not the kind to wait around and see if business would pick up. He knew it wouldn't. Within the hour he would bunch it and drift—east generally, with a vague idea of making the Lake Superior ore rush.

But first, he needed sustenance to bolster his morale, and so he demanded of an indifferent biscuit trundler in the company beanery: "Steak and French fries."

In the time the linoleum substitute masquerading as steak arrived with a heap of spuds, neatly browned.

The hasher purred, "Whatcha want to drink?"

"Coffee—in a cup, and not all over the counter.

With wrestler technique he chiseled loose a hunk of the meat and chewed it gloomily. He was tired of being a boomer. He'd marry his girl friend, Gert, and settle down—that is, almost. He'd make just the ore rush in Minnesota in the summers and the Florida rush in the wintertime.

Soon he was day-dreaming of the luscious Gert, the red-headed, plumpish cook at the beanery in Bayou, Louisiana, patronized by all car hands in the vicinity. He forgot his current woes and thought only of the future: Gert's delectable biscuits, confections no less—three inches high in their flaky lightness and afloat in ribbon cane syrup.

For Hidebound, to think was to act. Often he acted without thinking—it saved time. At the Railroad Y he picked up some stationery and spent the next three hours drawing up a proposal of marriage. The letter ended with: "Enclosed find six cents in stamps. Airmail reply to General Delivery, El Paso."

And so Hidebound headed east. He didn't doubt that he'd get a most enthusiastic "yes" when he picked up Gert's letter in El Paso.

The postoffice clerk doled out a single letter with Gert's scrawl on it, and the postmark of Bayou, La. He tore it open, but his eyes bulged as he read:

Mr. Hidebound McGee
El Paso, Texas
Dear Sir:

Listen, you ape. Every time you come near me or write, you ask me to marry you. You tell me I make the best biscuits you ever ate. All you railroad lugs love my cooking, but so does the United Beaneries—they pay me thirty bucks a week to swing a skillet.

I'm not marrying a tramp conductor or a boomer of any kind. My Pa was a tramp car hand and I won't go through what Ma did, even if I do love you and you know it, you big lummox.

If you want to marry me, you got to stay settled. The Hobo local is hiring conductors right now. Go over there and stick. The day you can hold the St. Etienville Local regular, advise and I'll set a date.

Also I want a white house with green shutters on Magnolia Street. Get all that lined up and I'll bake biscuits for you exclusively.

As ever, GERTY.

Hidebound had to admit that "Gert's got something there." It was a week before his ego recovered from the blow.

FROM then on it was easy. A few days later he stood in the doorway of the office of "Big Foot" Reyfuss, trainmaster in St. Etienville.

"Hi ya, Mr. Reyfuss!" Hidebound greeted him.

The subdued behavior of the boomer, who had never before meekly entered that office nor greeted him as Mister, puzzled Big Foot. The roving conductor had run a train there four or five times before, but would never stay.

"I see the Hobo local is vacant," Hidebound remarked amiably.

"When in hell wasn't it?" the T. M. snorted.

"I'll take it and stay on it."

"What's wrong with you? Been fired some place for Rule G or a head-ender?"

"No sir—record's still good. I said I'll take it and stick."

"I wish I could believe you." Big Foot shook his head mournfully. "But—I've got to have a man for it. I just lost a couple of conductors this morning."

A look at Big Foot's hand and skinned knuckles told Hidebound that a couple of brothers had just departed via the Rule G route.

"All right, I'll mark you up," the trainmaster said, "but you keep your nose dry while you last, or I'll can you."

When Big Foot canned a man for Rule G, it mean that the object of his wrath was thrown out bodily while on the job and would come to later in a nearby ditch. Yes, Big Foot was mildly opposed to drinking on duty. The boomer, was aware of these facts, and bore them in mind as the days and weeks and months came and went.

Yes, Hidebound stuck. The trainmaster's skepticism gradually changed to mild admiration, but he couldn't see why Hidebound stayed on that cussed Hobo local.

It was a run nobody had ever wanted—Hidebound could hold it with no fear of being bumped. He'd been there for months, almost a year, the trainmaster reflected. It was incredible; there was a catch in it somewhere.

The job itself wasn't so bad. Not much work to do—just hauling twenty or thirty empty boxcars out to Lake Claiborne, spotting them at the salt mine, and then coming back with the loads. That took five or six hours and paid only a minimum day, six days a week, with nights and Sundays off.

But running the Hobo local to the salt mine meant going thirty miles into the swamps. That was the big hitch. In summer, the marsh stank to the high heavens of dead fish, and the mosquitoes were as big as humming birds. In winter, fog hung so dense that you couldn't see two carlengths away, and there was always a drizzle when you had to go out and work the run. When you came right down to it, the only attraction of the Hobo local was short hours—which didn't seem enough to hold a boomer like Hidebound McGee.

Big Foot couldn't understand it, and one morning when he saw Hidebound approaching his office he figured the jig was up. "Here it comes," he groaned.

The train crew boss was feeling unusually morose. A couple of conductors had filled up on gin and wired their resignations from the far end of the division. That cheated Reyfuss of the pleasure of canning them. It wasn't ethical, the T. M. thought, his fist itching for at least one poke at a drunken no-account. He sniffed hopefully as Hidebound entered the office.

"Well, I suppose you too have come in to quit?" he growled.

Hidebound looked like the model of a proper conductor. He spoke fast: "No sir, I want passes to Niagara Falls for a honeymoon; and can you plan to let me lay off for a couple of weeks beginning September nineteenth? I'm getting married on the twentieth."

It took Big Foot some time to grasp the idea that Hidebound McGee was about to homestead.

"You mean that?"

"Yep. I told you a year ago I was tired of booming. I had to stay on this damn local to prove to the gal that I had what it takes to be housebroke."

"I get it," Big Foot chuckled. "When

you come back you'll bump on another job—"

"No, I have to stay on the local or else—Besides, I sort of like it now. It's a pretty soft job, and being at home evenings and Sundays won't be half bad for a newly-wed. I'm even buying a house on Magnolia Street," Hidebound went on dreamily, "and I've fixed it so the bride can select her furniture on easy payments."

Big Foot's jaw dropped; he was convinced. "Okay, I'll get you the passes and fix a layoff for you, if I have to stand over the extra man with a step elm club to make him stay on the local."

TO REACH Bayou, Hidebound had to ride south on his own road to Chatagnier. There the Vicksburg, Alexandria & Gulf made a junction with the Houston, Baton Rouge & Eastern. And there, too, worked an earthy character—a man cordially hated by all boomers, who had licked him, and by the home guards, who hadn't licked him for fear of losing their jobs. This notorious fellow was "Hardnose" Harrigan, trainmaster.

Hidebound came in on the Hobo, Number 1, which connected with Number 4 of the "Hot Biscuit," so-called because of its initials and the fact that it led to Bayou where Gerty was queen of the beanery. The groom-to-be had no pass over the road, but he had an order for one, addressed to Hardnose. As he raced up the steps to the office, Hidebound expected to find the cadaverous chief clerk there as usual. He'd made the Biscuit cane rush many times, and knew the road and its routine.

The chief clerk wasn't at his desk, and from an inner office Hardnose's voice boomed out. Hidebound could see him at the system phone, no doubt having it out with P. B. ("Pot Belly") Smithers, the Super down at Bayou.

"Yeah," the T. M. was rumbling into the phone, "and if I had a drawbar in the seat of my pants I could couple into that oil train myself and drag it over to Bayou. But the fact remains that I ain't got no conductors and no place to get one on short notice. Maybe you know there's a war on, and conductors—good, bad or indifferent—are scarce as Nazis in Moscow. . . . How come I got no conductors? That dimwit chief clerk here cleaned off my board; and besides, Big Foot Reyfuss up at St. Etienville is hiring everybody and sending them wire passes to come up there—"

Hidebound chuckled when he heard that one. Old Harrigan was having a tough time, all right, but Number 4 was about ready to go, and the boomer wanted his pass. He hoped Hardnose would hurry.

"—I can't move that oil train right now, and that's that!" The trainmaster banged down the receiver and whirled around to find Hidebound standing in front of him.

Pass order in hand, Hidebound began, "Mr. Harrigan—"

"No, I won't hire you," Hardnose bellowed from habit. He never let anyone get the idea he needed a man. "I've had you here two or three times—"

"I wouldn't take your damned job, even if I needed it," Hidebound snapped back. "I got a pass order here and I want to catch Number 4—".

"Oh, so you don't want a job?" The trainmaster looked disappointed as he reached for the paper. "You're working for the Hobo?"

"That's right."

"Over a year, too," Hardnose was thinking aloud, "or you wouldn't rate a foreign pass."

"That's right," Hidebound agreed, "but please hurry it—Four's about to leave."

He should have noticed the crafty look that came over the trainmaster's face. Hardnose started to fumble through the desk drawer, looking for the pass book. Four's whistle sounded off. Hidebound ran down the steps and got to the platform in time to see the rear coach rattle away from the far end.

"Damn that son of a—" he muttered, heading for the depot beanery. Two minutes later, with a cup of coffee and some doughnuts before him, the prospective honeymooner was figuring out how to get to Bayou by evening, when he saw Hardnose coming through the door.

"I'm sorry, McGee, I couldn't get you fixed up in time."

"Yeah, and now you're going to say I can take that oil train over to Bayou—"

"Who told you?" Hardnose barked in surprise.

"No one. I'm on to you, Harrigan. You stalled around with that pass just to delay me. I heard all that big talk you had with old Pot Belly."

"That's no way to speak of your superior officer—"

"Hell, he's no superior of mine."

"Now look, Hidebound, I'm in a jam," the trainmaster wheedled. "The road's got an ODT contract to haul aviation gasoline to beat Hitler. I can't move the train because that dumb clerk ran off my conductors, and we'll lose the contract. Let's be patriotic. Forget the past, and you do me a favor for once."

Hidebound parried: "But I have to be in Bayou by six o'clock tonight; and the way things are now, I'd be sixteen hours getting there."

The trainmaster detected the note of hesitation. It spurred him on to greater efforts. "Come on, have a bite of breakfast. I'll tell the despatcher to give you right over everything—even Number 9. You can go over in four hours."

Before he realized it, Hidebound McGee was sitting at the counter, and Hardnose was slowly winning what he wanted.

"Just for this one trip, Hidebound."

The little blond-haired waitress, who had heard it all, cut in with her two cents' worth.

"Say, Mister, that's not an ordinary train—that's aviation gas for the Yanks

THE DERAILED CARS had cleared the main line and two others were off all wheels, including the caboose . . . Hidebound found a maul and spiked the point

in Italy. Maybe you won't get to Bayou—but they got to have it. Where's your patriotism?"

Hidebound seemed to be thinking. "Okay, Toots, you win."

The trainmaster was already at the door, a hopeful grin on his face. "I'll tell the dispatcher to turn you loose. Here's a current timetable and a switch key—you'll get the bills and orders at the tower. Just go out there and highball, roll her out of town."

IT WAS hot in the Louisiana sun. Hidebound was dressed for his wedding in a new light summer suit; he wore even an immaculate panama hat with a red and yellow band. He could feel his fine clothes already wilting.

His oil train stood some twenty carlengths below the depot. The engine was hooked on, and Hidebound could see the hogger in the cab, feet propped up on the

boiler head. Both brakemen were drowsing in the shade of the tender.

"All right, Sleeping Beauty, get her out of town!"

The hogger unwound himself and looked down. "Hi, there, Hidebound! When did you hire out?"

The conductor recognized the speaker as "Whipcracker" Martin. "Didn't hire out," he grunted. "I'm just taking this train over to Bayou to help out. They ain't got any skippers left."

"I'll say they ain't," the engineer laughed as he descended to oil around. "They canned five this morning."

Hidebound groaned while Whipcracker slowly and carefully poked his oil can here and there over the mill. At length he climbed aboard; and as the caboose careened past, the conductor swung himself up. His wedding clothes were looking like dishrags.

At the tower the rear man caught the orders and the bills, but the string broke and half the papers fluttered to the ground. Hidebound pulled the air and heard a knuckle snap.

The yardmaster ran up. "Don't delay the train to put in a new knuckle. Throw her back into the yards and get out of here."

When Hidebound picked up new orders at the first station, he swore loudly. The dispatcher had busted the order giving him right over all trains. Now, instead of Nine being in the hole for them at Bee Creek, it would meet them at Carnes, and of course hold the main line.

Nine wasn't in sight when the oil train headed in at Carnes. Ten minutes ticked away before Hidebound heard an approaching engine. As she came nearer he noted that the train was a freight.

"Hell, now we'll have to saw Number 9," Hidebound muttered. "Might as well back up and be ready, Whipcracker," he called to the engineer.

The hogger whistled three times, hunched the locomotive back against the train, and began backing it up slowly.

The prospective bridegroom sent his head man up the track to flag Number 9. Three or four cars of his train were going to be on the main stem. He looked toward the rear end. The caboose was through the turnout, headed down the main. The rear man should get the switch.

Twenty minutes later Nine showed up and was properly flagged. She eased down the main line between the switches. The train ahead of him began to back up. Hidebound looked down his track as it began pulling ahead. He saw a tank car turn over and two hopping about crazily.

Then he realized what had happened. The brakeman had let the rear end run through the switch, which was now derailing the end cars.

Washing out Whipcracker sharply, he started on the run for the scene of this new disaster. The derailed cars had turned over to clear the main line, and two others were off all wheels, including the caboose which was barely in the clear.

After examining the switch, Hidebound saw that the headblock was broken and not the point. He found a maul in the possum belly of the caboose and spiked the point. When Nine and the extra passed, he beat it for the head end.

"We'll have to leave the caboose and the derailed cars right there—I can't rerail 'em. I'll tell the dispatcher."

Hidebound ended his message to the DS with a threat: "Unless you restore the right I had over all trains, I'll leave her sit right here."

"Okay, I'll fix you at Denton," the harassed dispatcher replied.

ON THE new orders Hidebound's train began to roll, and he figured he'd had all the bad breaks.

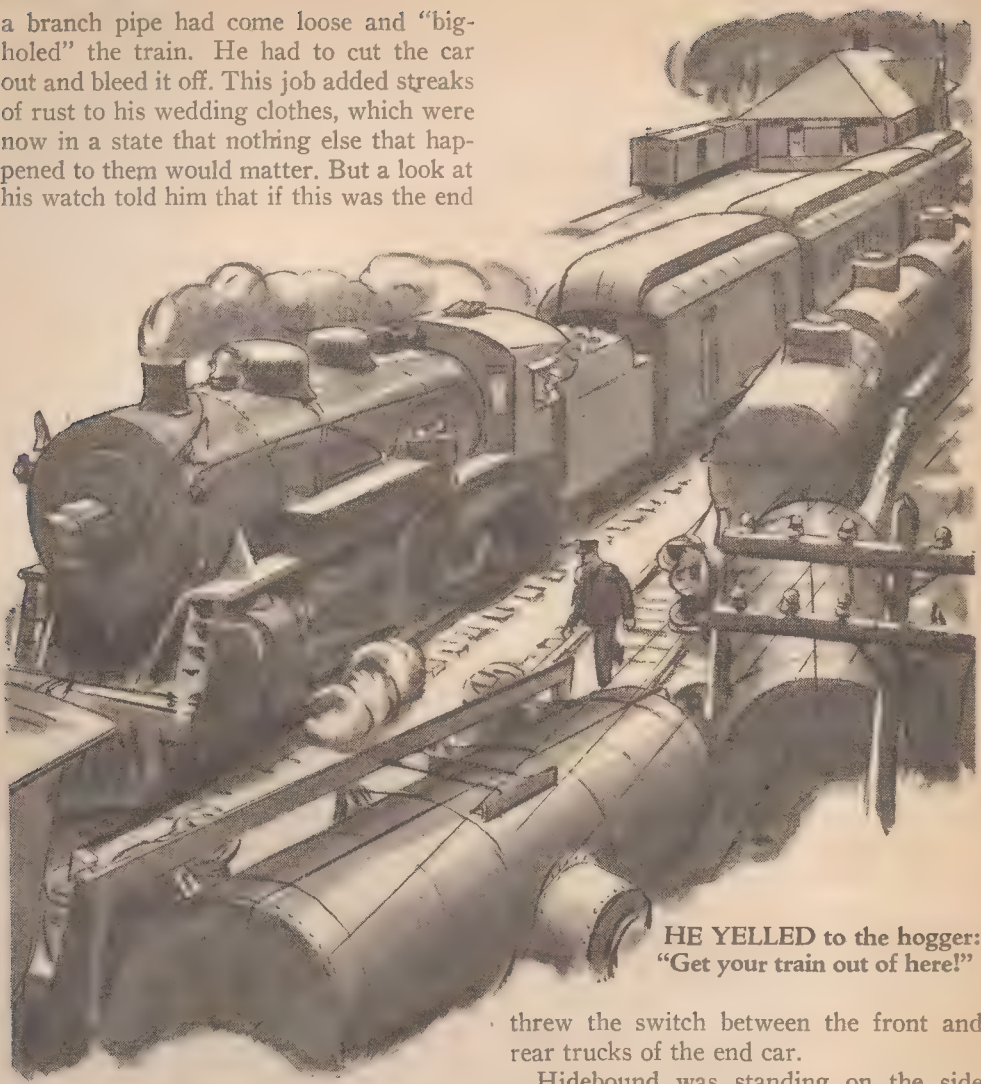
"It looks like we'll get over the road now," he said to the brakeman. "Damn near time! I've got a date to marry a girl in Bayou."

"Yassuh, it sho' do look that way."

The rear man had scarcely drawled his answer when the car shimmied, and with a jiggling screech of brakeshoes biting wheel rims, the train slammed to a stop. Hidebound tore for the head end.

Twenty car-lengths ahead he found that

a branch pipe had come loose and "big-holed" the train. He had to cut the car out and bleed it off. This job added streaks of rust to his wedding clothes, which were now in a state that nothing else that happened to them would matter. But a look at his watch told him that if this was the end



HE YELLED to the hogger: "Get your train out of here!"

of the hard luck, he would be in Bayou by 4:30, in time to get a new outfit before the wedding.

The oil train got down to Yeleau, two stations from Bayou, a mere twenty miles, and Hidebound began to relax. But an order was waiting for them: First No. 74 Eng. 1061 take siding and meet psgr. extra 389 at Zeno.

As they approached Zeno, he could see the passenger extra holding the main line. The brakeman had the switch open and was highballing. Whipcracker Martin took the train in on the jump and as the rear neared the switch, the brakeman threw the switch between the front and rear trucks of the end car.

Hidebound was standing on the side running board of the tank. What in hell! he thought, but it was too late to shout. He scrambled over the rounded top of the car, just before it slammed into the engine on the main line.

The jolt threw Hidebound into the trackside ditch. When he had struggled out of the slimy water and had gotten the mud out of his eyes, he noticed the smell of gasoline. It was leaking out of the derailed tanker.

He yelled at the extra's hogger. "Get your train out of here before the engine sets that gas afire!"

The engineer needed no second warn-

ing. Luckily, the main stem was clear, and the passenger extra roared away toward the west.

Hidebound was ready to quit. This newest mess was the worst yet; it was too late to bother about being covered with mud. He'd never make Bayou in time. The mere thought of standing up the beautiful Gerty on their wedding day drove him wild. Halfway toward the head end he met his brakeman. The latest bit of news was nothing to cheer about.

"They's fo' cahs on the groun' up theah, and two mo' with drawbahs out. The two which is on the groun' right in front of the dee-pot am blockin' the main line. Looks lak we's settled till the wreckah come, suh."

"Wrecker hell," snorted Hidebound. "Aren't those section men up there?" He looked at a gang some ten car-lengths beyond the head end.

"Yassah."

"Go up there and tell that foreman to get down here with his men. Then bring the engine down to the house track back of the depot, clear those three cars off it and shove them down the main line."

"Yassuh." The brakeman started off up the tracks at a slow trot.

The section foreman and his gang straggled up. Hidebound was ready for them. "Get busy and shift the housetrack and main line to a joint."

"Whose 'thority?"

"Mine!" yelled Hidebound. "And get moving. Cut the main line on the other side of those rerailed cars and then shift the stub end of the house track over to meet them—we'll give 'em track to move on."

The foreman was startled into action by the conductor's tone. In less than an hour the engine passed over the new track. With the switch spiked at the pass, the engineer could reach in and get all the cars to the rear of the derailment. Shoving these ahead, he passed through the house track to the main stem and backed in on the head of his train to the other end of the pass. At 5:55 they were again enroute, with Hidebound riding the head end.

TWELVE minutes later they ground to a stop at the Lottie watertank. Hidebound heard Whipcracker and the pumper talking.

"Now what's the matter?" he shouted.

"The pump's busted—no water here. We're through, Hidebound," the engineer said.

"Through, hell! It's downhill all the way to Bayou. You got steam enough to start 'em. We got right over everything—we'll just coast in. Turn your oil off and save your air for a stop."

"Okay," called the engineer. "You're the boss."

When they got to the Bayou yards, Hidebound highballed, and Whipcracker let 'em roll right down the main. As the head end passed the yard office, the conductor opened the angle cock and the battered train came to a stop. It was just 6:22.

Hidebound caught sight of the division Super as he jogged to the yard office with the bills.

Pot Belly Smithers waddled out to meet him with: "Say, that's the finest piece of railroading I've ever seen, bringing that train through the way you did—"

"That's nothing, Mr. Smithers. Two rails come all the way down here, don't they?"

Hidebound hurried into the yard office—an hour wasn't going to be much time to clean up for the wedding. He bet Gerty was in a dither when he didn't show up on Number 4 at noon.

He rounded the corner into Main Street, and ran smack into Gert herself, just outside the back door of the beanery.

"Hidebound McGee! Coming here looking like a tramp—on this of all days! Oh, oh, oh!" she wailed.

"Now, Gerty, wait a minute—"

But Gert was started on a tirade, and Hidebound stood wide-eyed and silent.

Pot Belly caught up with the conductor, and tried to explain. "Hidebound had some bad luck coming over with a gasoline train. He had to fix up all kinds of messes, but he avoided delay and saved our contract for us. He's got a job with us—"

This news added fuel to Gerty's fire.

"So—you blew your job and hired out on this road! You know what I said—"

Hidebound saw that Pot Belly was only adding to his difficulties. He was boiling over, and Gerty wasn't cooling off either.

SUDDENLY Hidebound stopped, his eyes wide with astonishment. He had caught sight of an old Negro aunty rolling out biscuit dough in the kitchen of the beanery. He strode over to the doorway.

"Aunty, how long have you been baking biscuits in this joint?"

" 'Bout twenty yeahs, suh."

"You're sure Miss Gert didn't bake 'em?"

"Laws, Mistah, that chile don't know no mo' 'bout bakin' biscuits than a baby."

Hidebound whirled around to face Gerty. In one moment all his supposed love for her had evaporated. He could see that she'd be a life-long nagger—he'd have to do as she said, and put up with her tirades when she wouldn't listen to him. Besides, there wouldn't be any home-made biscuits.

"Gert, you lied to me!"

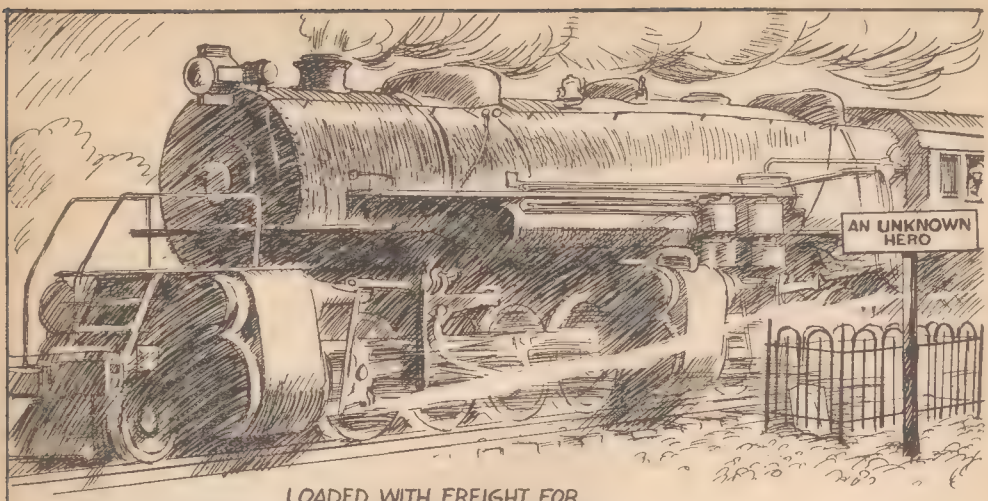
He stalked off, to get clean clothes and be on his way, where to he didn't know or care.

"Wait, Hidebound!" he heard Gert calling.

"I'll write *you* a letter, with *my* terms in it," he shouted back.

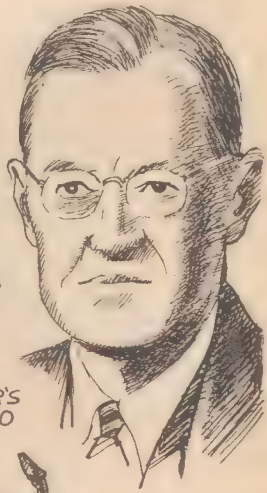
"Oh boy!" Hidebound sighed with relief, as he caught the end of the last cut going on the ferry boat which would take the oil train across to Baton Rouge. "That was a narrow escape. I nearly got hooked!" He gave the flank of the tank car a bang with his fist. "Tank," he said, "you're carrying oil for the Yanks in Italy. I'm not going that far, but hereafter I'm sticking to the main line. Me and the Hobo local are all washed up."

You spend less dough—look slick besides—
Through toughest whiskers this blade glides!
And Thin Gillette lasts long—shaves clean,
You save on time—your face feels keen!
WIN THE WAR IN '44
Made of easy-flexing steel hard enough to cut glass
Gillette
BLADES
4 for 10c
Produced By The Maker Of The Famous Gillette Blue Blade

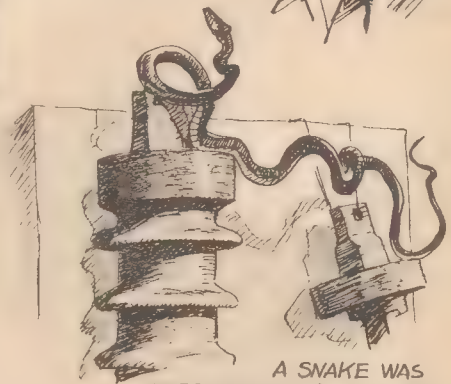


LOADED WITH FREIGHT FOR TODAY'S WAR, A MODERN NC&StL TRAIN ROARS PAST THE GRAVE OF A CIVIL WAR SOLDIER, A CONFEDERATE WHO FELL AT ALLATOONA PASS, GA., IN 1864.
(From Sgt. Bob White, Saranac, Mich.)

THE ONLY LACKAWANNA ENGINEER BORN ON RAILROAD PROPERTY--THAT CLAIM IS MADE FOR JOHN I. McPEEK, KENVIL, N.J., NOW RETIRED. JOHN WAS BORN IN A DEPOT. BOTH PARENTS WERE "RAILS"
(From Russell Buckhout)



70 YEARS A "RAIL" AND STILL ON THE JOB! WHO CAN BEAT THE RECORD OF BOB FRANKS, AGE 84, ROCKFORD, ILL.? BOB BEGAN WORK AT 14, IS NOW IN THE MILWAUKEE FREIGHT AUDITOR'S OFFICE, CHICAGO



A SNAKE WAS ELECTROCUTED THE OTHER DAY WHEN IT RASHLY CLIMBED TO THE TOP OF AN 11,000-VOLT TRANSFORMER AT RODERFIELD, W. VA., DELAYING NORFOLK & WESTERN "JUICE HOGS" FOR ONE HOUR
(From N&W Magazine)

ALONG THE IRON PIKE

by JOE EASLEY

SCENE IN PENNSY FREIGHT YARDS, CHICAGO, LAST AUGUST 23RD REMINDS US OF THE OLD STORY OF A BOOMER SWITCHMAN WHO SAW A BOXCAR PLUNGE OFF A DOCK AND CALMLY SIGNALLED FOR ANOTHER CAR TO TAKE ITS PLACE (From W.E.LaFountain, Chicago)

NO LONGER DO OIL-BURNING LOCOMOTIVES OF THE MISSOURI PACIFIC "FUEL UP" FROM TANK CARS. URGENT NEED FOR THESE CARS ELSEWHERE HAS CAUSED THE COMPANY TO INSTALL STORAGE TANKS AT FUELING POINTS. THIS ONE IS LOCATED AT GOOSE CREEK, TEXAS

Brazing Speeds Up Cylinder Repairs

JUST as the welding supervisor glanced out of the boiler-shop window, the switcher backed a big Pacific onto the machine-shop spur. Knowing that the engine had a badly broken cylinder, he stepped outside to look it over. The superintendent met him as he came through the door and they walked over to the crippled giant together.

Examining the break, the super said, "I suppose they'll have to put on a new cylinder."

During the next few days, while the engine was being prepared for brazing, the welding supervisor was asked the same question dozens of times. Obviously a great many railroad men not closely associated with back-shop repairs fail to realize the great saving that acetylene and electric welding plays in the reclamation of locomotive steam cylinders, whether they be of the cast-iron or newer cast-steel type.

Not all cylinder breaks are weldable and it is a wise foreman or supervisor who knows to what extent this repair method can be used successfully. The cracked casting pictured on this page is an example of a common break—and of one of the easiest to repair. Its cause is the failure of some part while the engine is in motion, and it is generally confined to the front end of the cylinder, where the cracked piece or pieces hold to the cylinder head when that member is forced from the cylinder by the impact of the disconnected, speeding piston. The same thing often occurs when attempting to move a locomotive having ice between the piston and the cylinder head.

While some method of preheating and heat-retaining must be used in the brazing of all cylinders, there are times when extensive procedure is neither feasible nor necessary. The temperature of the metal may be raised and intermittently maintained with an oil burner, or—as most welders prefer—even, soaking heat from a slow-burning charcoal fire may be applied.

In repairing serious fractures, it is frequently necessary to remove a portion of the outside cylinder wall to reach an internal break through the exhaust or ad-

LEFT TO RIGHT: Front end of cylinder broken out by main-rod failure; segments of cylinder fitted back into place and ready for preheating; welded and bored cylinder, ready for service; even fractured bushing has been fitted back in place

mission ports. The accepted method is to drill a series of holes and break the section out with the sledge-hammer. When the entire length of the internal break is made accessible, it is chipped for brazing, along with the outside member or the piece of metal plate used as a substitute.

Thorough preheating is now necessary to insure the success of the repair. If the cylinder has been removed from the locomotive, the entire broken half should be encased in some sort of furnace. Many back-shops have asbestos-lined boxes which can be lowered over a broken cylinder. They are made in sections, allowing ready access to the cracked cylinder, as well as refueling of the charcoal fire.

IF IT is impractical to remove the broken half-cylinder, it will be necessary for those preparing the weld to build an impromptu furnace around it. Such furnaces vary in style, depending upon the whim of the constructor. But they are all basically the same. That is to say, heavy steel or iron bars are laid across the rails beneath the cylinders. Blocked up on these supports are steel plates of second-hand or scrap stock. Upon this furnace platform, or base plate, fire-brick are arranged to hold pieces of front-end netting, some six or eight inches off the plate and about twelve inches down from the bottom of the cylinder. The netting will support the fire, so naturally it must be placed where the heat is most effective.

EDDYSTONE? SCHENECTADY? LIMA? Guess again. This modern backshop is being operated by the U.S. Military Railway Service somewhere in North Africa

The next problem is to construct a fire-brick wall around the unit. This will be built up snug to the bottom of the cylinder, thence flanking its three exposed sides as closely as possible. Discontinued arch-brick help to speed the first few courses, while ordinary fire-brick surrounds the cylinder proper. The builder must remember to leave openings for firing, and to enable the welding operator to reach the break. Short, flat pieces of bar-stock about one-fourth by four inches in cross section make ideal lintels or supports over the top of these openings. Holes and chinks between the bricks are filled with wet asbestos, and the furnace cover is usually formed from several layers of asbestos paper. With such a structure, from three to six hours may be needed to heat the cylinder thoroughly, depending on its size and the location of the fracture.

Some welding operators have considerable trouble maintaining a smooth, even reinforcement with the bronze welding rod. The following procedure is a successful method which helps to speed the placing of large bronze deposits.

Several strips of one-eighth or three-sixteenths-inch steel, from three-quarters to one inch wide, are cut. These strips are made just long enough to cover the normal reenforcement of the weld. For example, if the weld "V" is one and one-half inches in breadth, allow three-quarters of an inch on either side for the width of the bronze overlap, making the total width about three inches, or three and one-fourth inches for the length of the steel strips. These are bent to give a 10 percent thickness to the reenforcement—usually one-fourth to three-eighths inches thick. When the operator has the "V" hot enough to start brazing, a dull red, his helper will hold one of the steel strips at the bottom of the notch. The piece is soon caught securely with the molten bronze, and when the cavity so formed is full, another strip is added. This process is continued until the vertical "V" is completely brazed. Obviously all that can be seen is the even contour presented by the outside of the steel strips. This method saves a tremendous amount of bronze—an important item during the present metal shortage.

When the brazing is finished the fire is replenished, all openings closed tight, and the charcoal left to burn out and the cylinder to attain room temperature.

Normally welded breaks in the barrel of the cylinder make it necessary to rebore and rebush the member. In the one pictured on these pages, however, the bushing was in several pieces. Due to the urgent need for the locomotive, the welding operator fitted the segments back into the cylinder, clamped them securely, and did such a neat job that one light cut through the cylinder with the boring tool was all that was needed to return it to useable condition.

The new one-piece engine beds with cylinders cast integral have given some trouble, showing a tendency to break just back of the cylinder proper. Such failures may be successfully repaired by scarfing with the cutting torch and arc welding, using heavy-coated electrodes. The flame-cut surfaces must be scrupulously clean before any welding is attempted. Chipping bright with an air-hammer and chisel is considered excellent preparation here.

As in most arc-welds, the root or initial bead is fused well into the bottom of the "V", making certain that even the smallest amount of fracture is eliminated. For if some of the original crack is left, it is only a matter of time before the break will reoccur.

It should be clear from the foregoing that the majority of broken cylinders can be welded and kept in service. However, when serious cracks extend into portions of the casting inaccessible for chipping, grinding, or welding, it is useless to try to braze the part or parts of the crack that can be reached, for invariably the old seam will open up again.

Practically all welding supervisors and instructors have learned through bitter experience just how far to go in the field of cylinder brazing, and anyone having a seriously broken cylinder to repair should first seek the advice of one of these qualified experts.

PRR's K-5 5699 casts billowing smoke shadows over a Maryland meadow, enroute from Baltimore to Harrisburg with the ***Liberty Limited***

The Information Booth

EACH month the Lantern Department includes, in addition to a technical article on some ramification of railroading, answers to rail questions of general interest, submitted by our readers. We do not send replies by mail.

1

WHO invented the safety valve?

Engineering manuals generally credit Denys Pepin, a Frenchman living in England, with having devised this mechanism in 1680, for application to a food pressure cooker called a "digester." It was a simple lever arrangement which could be weighted for any desired pressure.

While Pepin properly deserves the distinction accorded him, on the basis of controlled steam escape, crude forms of relieving pressure antidated his invention by many years. Most common of these was a conical plug loaded with a lead cap.

When the day of the working steam engine arrived, engineers were already familiar with Pepin's safety valve and it was used on all their boilers. The only improvement made prior to its application to the locomotive was to add a spindle which moved in a guide, causing the valve to rise evenly from its seat. The swaying of a locomotive, however, caused a weighted lever to be unreliable; therefore a spring was substituted for the weight. Enclosed in a brass cylinder graduated for different pressures, this "salter" as it came to be called, was for years the only means enginemen had of telling the pres-

Photo by Frank Clodfelter, 9 Plymouth Circle, Asheville, N. C.

sure of steam. (The effort required to lift the lever indicated the nearness of the blowing-off point.)

Unsatisfactory because it was sluggish in reseating, the levered disc valve was supplanted by the pop-valve in 1866. To George W. Richardson, an engineer with the Troy & Boston Railroad, go the honors for this highly efficient mechanism, which opens precisely at a predetermined pressure, blows rapidly, and closes with equal abruptness. This is accomplished by placing a chamber above the ground joint, wherein escaping steam is made to exert additional pressure to raise the valve from its seat against the increasing tension of the spring, before it is vented to the atmosphere. The escape port itself is restricted, so that the steam is confined sufficiently to do this work, without preventing the spring from promptly closing the valve upon a slight reduction of the pressure in the boiler.

2

RELATIVE to your recent article on cabs, I understand the Mexican Central began using them quite some time before they became anything like universal in the United States. Why?

Due to the high replacement rate for wooden cabs destroyed by tropical termites. The first Mexican Central engine to have an all-metal cab was a Rhode Island ten-wheeler built in 1895.

3

WHEN was the so called "diamond" freight car truck introduced, and by whom?

In 1857 the Trenton "N. J." Locomotive Works built the first iron freight car truck of this pattern for the Lehigh Valley.

The advantages of this structural form were so apparent that other railroads almost immediately followed suit.

Photo from Railroadians of America

SUBURBAN tank engine of a bygone era, The New York, Lake Erie & Western's 416 had a 2-wheel trailer truck with fuel bins over it

4

WHAT do the initials "OH" and the numerals 111111 stand for on the webs of rails?

They are a part of the brand, which usually lists manufacturer, initials of designing society or railway, weight of rail (per yard), the process of manufacture, and date of rolling. OH stands for open hearth and 111111 indicates the sixth month of the year.

5

WHAT is the difference between a lease and an operating contract?

Actually, very little. Both involve the operation of a small road by a larger one, the main variance in form being one of duration.

Leases are usually 99- and occasionally 999-year contracts, wherein the minor road hands over its property in return for a specified yearly payment; the major system agreeing to return it at the expiration of the lease in as good condition as when it was received! Payment of rental is usually in the form of guaranteed interest and dividends on bonds and stocks of the lessor road.

The operating contract, in turn, calls for the smaller line to pay the larger one a specified yearly sum for maintaining service on its property. While this sounds like a direct reverse of the lease, there is actually no difference between one road receiving, let us say, 70 percent of gross receipts of another in return for operating it, or, on the other hand, paying it 30 percent of its earnings.

6

HIGH-SPEED TRUCK under Pennsylvania's boxcar coach pictured in December Railroad Magazine appears to have very short wheelbase. How do you explain this, in view of greater wheel spacing found on most streamliner trucks?

The type of truck used on the PRR's emergency coach cannot be rightly called a passenger job. Rather it is the product of the system's experimentation with high-speed freight trucks, conducted several years ago. It might be pointed out,

Photo from Railroadians of America

STILL bearing Illinois Central's diamond insignia plate, twin speedsters *Illini* and *Miss Lou* are now in Susquehanna service. Photo was made on test run to Butler, N.J.

FIRST of 1200 troop sleepers. See answer to Item 8

however, that there is a growing conviction that long truck wheel bases are not essential to lateral stability.

7

WHILE I know that the Santa Fe used compound engines as extensively as any railroad in the United States, I have never heard of their operating a cross-compound. Did they ever own a locomotive of this type?

Yes, one. She was Number 260, a ten-wheeler with 20 and 32 by 26-inch cylinders. Known as the Richmond Tramp, she was built in 1894, and demonstrated on a number of railroads before being sold in turn to the Randsburg Ry., the Arizona & Utah, and the AT&SF (1905). In 1911, she was converted to simple, with the following dimensions: 20 x 26-inch cylinders, 68-inch drivers, 190 pounds' boiler pressure, 145,000 engine weight, and 24,700 pounds' tractive effort. The 260 was scrapped in 1924.

8

RECENTLY I read that the Pullman Co. is building 1200 troop sleepers for the Transportation Corps of the Army Service Forces. Will these resemble existing Pullmans?

No. They have been designed to utilize material with the maximum of effi-

NEW ALASKA RAILROAD TERMINAL. Whittier, on arm of Prince William Sound, is transfer point for twelve miles of newly completed track, extending to Portage. Project took two years; eliminates 52 miles of steep grades via Seward route

TRAINLOAD of supplies and equipment begins its trek from Whittier to Anchorage via Portage. Motive power is Consolidation 501

ciency and their cost, per unit, will be but a fraction of that of a standard sleeper. Each will accommodate 30 men, the berths being arranged transversely to the length of the car and on three tiers. For daytime occupancy the lower and center blocs of berths are adjusted to form seats reached by a side corridor. Lavatory facilities are at one end of the car.

A tariff has been worked out by which the War Department will pay approximately the established coach rate for troops moved in the new equipment.

9

LIST specifications of Canadian Pacific's 4-8-4's of the 3100 Class.

Cylinders .....25½ x 30 in.
Drivers .....75 in.
Pressure .....275 lbs.
Weight .....180 tons
Tractive Force .....60,800 lbs.
Tender .....21 tons and 12,000 gals.

10

WHAT do the initials E&NA stand for?

Probably the European & North American Railroad, charted in August, 1853 to lay trackage between Bangor and Vanceboro (International Boundry Line) within the State of Maine. Opened for traffic in 1871, it was consolidated with a company of the same name in New Brunswick one year later; operated for some time as a broad gage carrier. In 1882 its U. S. trackage was leased to the Maine Central.

OLD SAND CAR. New York State Railway's No. 041 was kept busy sanding rails made slippery by falling leaves that choked Rochester's broad Lake Ave. each fall. This photo was made in 1940—one year before abandonment

THE reduced number of locomotives with which American railroads are handling traffic in World War II is to no small extent offset by the increased capacity of such machines as the St. Louis-San Francisco's new Baldwin-built 4-8-4s of the 4500 Class. Fifteen units comprising this group are now in operation on the Eastern Division between St. Louis and Monett, Mo.; and the Southwestern Division, extending to Tulsa, Okla.; where they have released a considerably greater number of Mikados and medium-weight Mountain-type locomotives for service on other parts of the system.

While all of the new Northern engines are identical as to wheelbase, driver-diameter and principal boiler characteristics, their weights vary somewhat, as three of the engines, assigned to passenger service, are arranged to burn oil.

Outstanding features of design are extensive use of welding in the construction of the barrel, and the placement of the feedwater heater and stoker-engine in the tender. Conventional bearings have been used on both driving and truck axles, in conjunction with Hennessy lubricators. These mechanisms, which are finding favor on more and more roads, re-

Locomotive of the Month:

St. Louis-San Francisco 4500

quire no motivation other than lateral play to feed a constant supply of oil to the journals.

Disc-centered wheels are of standard Baldwin design; with side and main rods forged of Manganese-Molybdenum steel. Counterbalancing is static; an overbalance of 601 pounds being distributed, 100 pounds on the main wheel, and 167 pounds in each of the other drivers.

Specifications of the 4500s, together with those of the System's home-made 4400 Class Mountain engines, which they supplement, are as follow:

Specifications

	4500 Class	4400 Class
Numbers	4500-4514*	4400-4414
Type	4-8-4	4-8-2
Cylinders	28x31	29x32
Drivers	74	70
Pressure	250	270
Weight, Engine	462,500 (Frt.) 454,000 (Pass.)	419,200
Tractive Force.	69,800	68,600
Grate Area ...	88	76.2
Tender Weight	346,000	255,890
Tender	24 Tons or 6,500 Gals.; 18,000 Gals.	5,000 Gals.; 14,000 Gals.

Builder .....Baldwin Company

**4512-4514 are passenger engines.*

BURLINGTON HILL

BIG MEN in city clothes pushed past the groups of farmers and cowhands to reach the already crowded bar of Burlington's railroad hotel, one afternoon in July, 1886. The little Iowa town's streets were cluttered with wagons and buckboards; their owners stood around the depot listening to some trainmen off the Chicago, Burlington & Quincy special which had just pulled in.

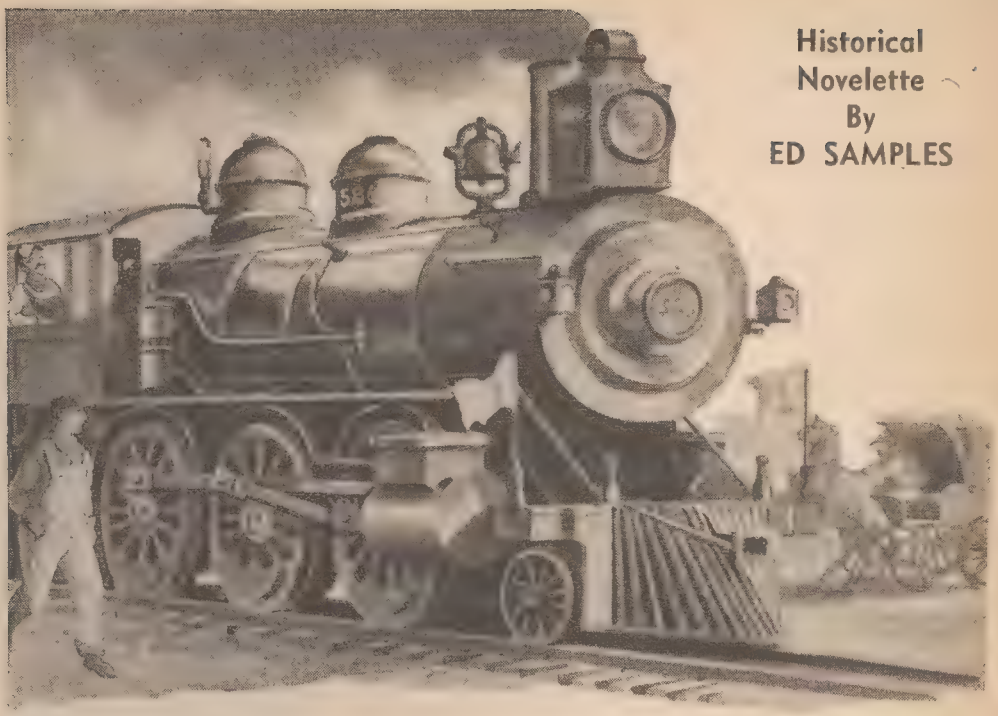
A husky Irishman, still holding his brakestick, was saying what most people were thinking that afternoon.

"We showed 'em," he announced, "Let 'em try and stop a freight quicker! Me and Jim Hoskins levered them wheels to a dead stop in little more'n a minute—eighty-one seconds the timer said—and we were goin' forty miles an hour down Burlington Hill! Get a good piece of hickory and an Irishman with a strong pair o' shoulders, and no gadget'll ever take the place of 'em on freights."

A stranger in town could have guessed what was happening, but the front page of the weekly Burlington *Gazette,* plastered against the window of the newspaper office, would have told him:

BRAKE TESTS OPEN TOMORROW!

The interesting and entirely novel series of scientific tests for various types of railway freight brakes will begin between this city and Middleton tomorrow morning. The companies competing in the tests are the Westinghouse Air Brake Company, the Eames Vacuum Brake and the Widdifield Button Brake Company. . .



Historical Novelette By ED SAMPLES

Stopping a Passenger Train With Automatic Air Was One Thing—But How About a Fifty-Car Freight?

Brakemen O'Connell and Hoskins and Conductor Dan McGuire had just completed the first of the tests. On the special CB&Q fifty-car freight train, they had set the standard for manually operated brakes, against which the manufacturers of power braking systems would compete.

A youthful-looking fellow, in unaccustomed linens and straw hat, lingered at the depot, half-listening to the boasting train crew. Pete Anderson, self-made engineer and foreman at the new air brake plant of George Westinghouse in Wilmerding, Pa., knew that the two brakemen weren't completely wrong to brag of their skill at hand-setting. Pete had helped to build and install hundreds of Mr. Westinghouse's air brakes on passenger cars, but was well aware that many railroad officials still objected to this device. At least, thought Pete, the tests are going to show that our equipment is more practical than that of other manufacturers.

FOR six months, Pete and the shopmen at the plant had been preparing for the Burlington tests. He had heard of them one morning in January, when Westinghouse summoned him to the little office in the attic of the factory.

As soon as he could leave his installation job, Pete hurried to the inventor's "den." Mr. Westinghouse kept a close relationship between himself and the men who were responsible for actually making and putting into operation the mechanisms he designed. Pete was not an inventor, but the head of the company had recognized his ability, and the younger man was one of several shop workers whom Westinghouse often consulted.

The company head was at his desk, reading a letter. Pete waited, noting as he had done before, the powerful, military figure, the black hair curved away from the high forehead. Moustache and side whiskers did not conceal the firm mouth

and squarely set jaw. Although he's not yet forty, Pete reflected, "the boss" has become one of the most important mechanical engineers in the country.

Without comment, Westinghouse passed the letter across.

The first paragraph told the story: "At a meeting of the Committee on Freight Brakes of the Master Car Builders' Association on January 6th, it was decided to invite the manufacturers of freight car brakes to a series of compartive tests, to be held at Burlington, Iowa, July 13, 1886, and April, 1887. . ."

Each company was to equip a train of fifty boxcars with its brakes, and have it in the Burlington freight yards before July 7. After the preliminary trials, which would be run there beginning on July 13, the cars were to be returned to their owners and put into regular service. Careful records on cost and repairs were to be kept, and at the end of a nine months' endurance period, the cars would go back to Burlington for a repetition of the July tests.

"We will send them some of our equipment, won't we, sir?" Pete asked, as he returned the letter.

"Certainly. We will get busy on the manufacture of fifty sets of freight brakes here at once. I shall arrange with the railroad to furnish us the necessary cars, and I think I will send you to Burlington in June to supervise the installation of our equipment."

Pete waited to be dismissed with the usual friendly nod, but Mr. Westinghouse wanted to think aloud that morning.

"We have equipped thousands of cars with the automatic air brake, and we have orders right now for twenty thousand more. But that's all passenger equipment. The contracts for equipping freight cars would amount to millions of dollars. If we can win this contest and induce the companies to equip with our brake, it will be the biggest thing Westinghouse has ever done.

"That's our side of the proposition," he continued, "but there is another. The use of power brakes on freight trains will revolutionize railroading. We are developing fast and powerful locomotives, but operating men cannot make full use of them, because they know they cannot stop safely by hand a heavy train travelling at high speed. If we can supply them with a power brake they are willing to adopt, we shall have performed a great service in eliminating the dangers for the men who use them on the road—and faster, safer trains will make available all the resources of the great West, which are only waiting for adequate carrier service."

BIRTHPLACE of the inventor was this little frame house near Schenectady, N.Y.

THE inventor did not need to tell Pete why freight trains were not generally equipped with air brakes. They both knew that this system worked well enough on short trains; but on ones of more than a dozen cars, the reduction of speed was not quick enough, causing a shock on the rear in emergency applications and break-aways that tore up equipment and endangered the train crews.

"Are you going to change your brakes to eliminate this shock before you enter this test?" Pete asked him.

"Can you suggest a change which would eliminate it?" Westinghouse challenged.

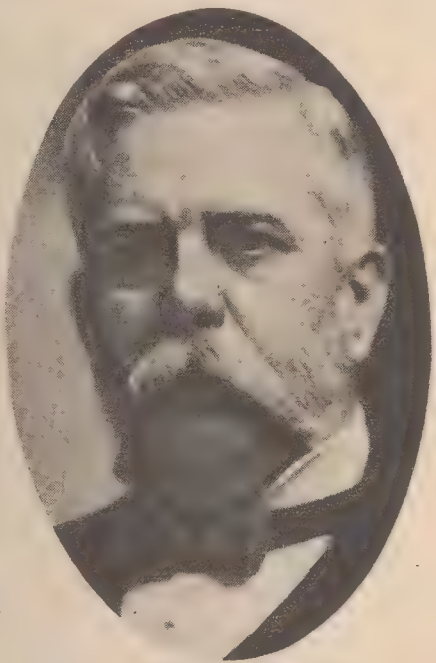
"No, sir; I'm afraid I can't. Inventing new things is not in my line."

The boss smiled whimsically. He stared out over the deserted street covered with new snow.

"I tried to find a way to eliminate it when I first designed the triple valve," he said thoughtfully. "I did not see the solution then, and I have not discovered it since, nor have I found any method devised by other men."

"Have you considered the possibility of the electric brake?" Pete put a question that interested him greatly.

"Yes, Mr. Anderson, I have considered the so-called electric brake. But, as you know, you cannot stop trains by electricity alone. The electric brake is either electro-mechanical, electro-hydraulic, or electro-pneumatic. I've worked on an electrically actuated valve to use in setting my air brake; but I have done nothing with it, because I do not consider electricity reliable enough for stopping trains. It demands the service of experts. Railroad men cannot be electrical engineers and can't be depended upon to use it in its present stage of development."



GEORGE WESTINGHOUSE as he looked in his later years

The inventor closed the interview with a glance at the Master Car Builders' letter.

"These tests will be useful in one way. Rigid standards will be set up, and scientific measurements will be made. When we know exactly what is required of a brake and where we fall short, some remedy may suggest itself. As matters stand now, we'll have to equip our train with the present brake and go into the contest with it."

PETE had gone to Burlington several weeks before the trials, to supervise the installation of air brakes on the fifty cars rented from the CB&Q, as Mr. Westinghouse had directed. When "the old man" arrived from Pittsburgh, just before the scheduled opening of the trials, Pete had completed his job. Nervously he had inspected every valve, every brake clearance, the train line and the hose connections half a dozen times.

On that first day at Burlington, a special train carried railroadmen and brake company officials, including Mr. Westinghouse and his installations foreman as they followed the first train on the course.

The section of track selected by the Car Builders for their trials was ideal for the purpose. Four straight, level miles ran from Middleton east to West Burlington, where the iron turned down a grade of fifty-three feet to the mile which was maintained for the three miles on into Burlington. The seven-mile stretch was divided into five sections of a little more than a mile each, the first three along the level, and the other two down the grade. The road had even erected a grandstand for the expected crowds.

The Burlington's 119, an eight wheeler with 17x24-inch cylinders, and 51,000 pounds on drivers, with Dan McGuire as skipper and Brakemen O'Connell and Hoskins aboard with their hickories,

CB&Q No. 72, American type from the road's Aurora shops, 1878. Engines similar to this one were used to pull the Burlington test trains

pulled the first test train. Mr. Westinghouse and Pete Anderson watched intently, for this crew was ready and willing to show that braking by hand-setting was an efficient method.

Directly behind the engine was the dynamometer car. This car had been built by the railroad to test its motive power. It looked like an ordinary yellow freight caboose without a cupola. In one end were seats for the men conducting the tests, in the other a set of recording instruments. In the center a bay window enabled a watchman to keep track of the mileposts on the run.

Just back of the forward truck was the long table where a sheet of heavy manila paper passed under the recording apparatus. On this moving sheet the completed diagram of each run was shown. Through the center of the paper was the line of normal pressure exerted by the drawbar connected to the locomotive. Any variation of this pressure was noted by a stylographic pen which was connected with the drawbar by a system of levers. On it was shown, also, side traction.

Near one side of the sheet, another pen, moved by an electro-magnet connected with a clock, marked every fifth second, and on the opposite side, an ingenious mechanism connected with the axle marked every sixteen feet. In this way, the complete record of each run was made on the sheet, showing drawbar pull, distance travelled, and time in seconds. Some of the equipment in the dynamometer car included Westinghouse devices.

In the waycar at the rear was a simple shock-recording device called a *slideometer;* this consisted of a flatiron bar weighing sixteen pounds, fixed to slide in a smoothly planed hardwood trough securely fastened to the waycar floor. It was far less complicated than the apparatus in the dynamometer car; but it was to play an important part in the brake tests, for it was the instrument which measured the shock in the waycar when the brakes were applied.

The brakemen handled their assignmen with skill, as O'Connell boasted later, and the Westinghouse men had a chance to see a train in action on the kind of stops that the test rules called for.

When the engineer in No. 119's cab called for the brakes at a speed of twenty m.p.h., as the engine reached the first section stop post, the conductor followed the usual practice of setting the first one, and brakemen did likewise. The train came to a full stop in 1042 feet and 47.2 seconds' time.

A pusher engine on the the rear was needed to get No. 119 under way. At the second post, going twenty miles per hour, the engineer signalled for the brakes, which brought the train to a halt in 73 seconds, 2759 feet being required. The third of the scheduled stops was

made from twenty m.p.h., downgrade; the train crew made it in 1074 feet and 49 seconds. The last, from forty m.p.h., downgrade, was made in 3500 feet, time 81 seconds. Every railroad man on Burlington Hill that afternoon knew they had seen the best hand-braking could do.

When Pete and the other Westinghouse men discussed the first day's run with the air-brake inventor, they agreed that their equipment could easily exceed the hand-brake record in speed. They knew, too, that the slideometer would be a faithful recorder of the degree of shock.

WHEN the significant competitive trials began, with the special freight cars equipped with each manufacturer's own brakes making the run, the grandstand was full. Again a special train, carrying the interested spectators, railroad officials, and operating men from all over the country, followed along the course. Men came from the Southern Pacific, and the Union Pacific, from the Gulf Lines and the Santa Fe, from the big systems of the East and Midwest.

They watched eagerly as the trains came out. First on the course was the *Widdifield Button* train. The brakes stopped twenty-five cars, thirteen of them loaded, from twenty m.p.h., on the level in 500 feet, and from forty in 1493 feet. On the downgrade, it required 588 feet from twenty miles an hour, and 2781 feet from forty.

Pete was sitting beside Mr. Westinghouse when the record of the run went up on the board.

"We can beat that, sir," he said.

"Yes, we can," the inventor agreed, quickly sizing up the weakness of the Widdifield entry. "They lack stopping power. They have bested the hand-brake record by less than twenty percent. A brake which can do no better than that will not be considered by the Committee."

Mr. Westinghouse called his men together in his private car that night for a brief conference. They discussed the results of the Widdifield test, and agreed that the brake, then in use on the Lehigh Valley, was definitely out of the running.

THIS was one of the Burlington's modern locomotives when the tests were held. The new 378 was built in Aurora in 1886

"We will see tomorrow what the Eames people can do with their vacuum brake," he declared. "Several railroads are using it, but from my observations of its work, I think that Eames will have to make improvements if he expects to make much of a showing here."

The train with Eames' brake went on the course the next day, in charge

of Mr. Massye, the chief engineer of the company. His brake stopped the string of twenty-five cars from twenty-one m.p.h., in 473 feet on the level and from thirty-eight m.p.h., in 1385 feet. On the downgrade, he required 485 feet for the stop from twenty miles and 2073 feet from forty.

That was a far better showing than Widdifield had made; but as Westinghouse analyzed the situation, the Eames brake also lacked power. It slightly more than halved the time required by hand. The run was repeated, but the second trial showed no better results than the first.

With the Widdifield and Eames runs out of the way, the field was clear for Westinghouse. Pete Anderson and several company men made the final check-up of the string of boxcars that Dan McGuire and his crew were going to use. The company's engineer of tests was in the dynamometer car, Pete and the inventor in the caboose. With them rode a member of the Brake Committee and a group of friendly officials.

Their run consisted of same four service stops that the other trains had made. On the level, the air brake stopped the string in 524 feet, not quite as good a showing as Eames and Widdifield. From forty miles an hour, they stopped in 1007 feet, a better showing than either of the others. On the downgrade, from twenty miles an hour, a stop was made in 488 feet, only a little better than Eames. But when they rolled down on the fourth stop post at thirty-five miles an hour, the real advantage of Westinghouse equiment was clear. The train stopped in 1384 feet.

THAT was the record of the day for service stops. It showed beyond question the superior power of Westinghouse equipment at high speeds. The air brake could stop train on the grade in half the distance required by the Widdifield brake and in two thirds of that required by the vacuum.

One feature of this test worried Pete. If it worried Mr. Westinghouse, he gave no indication of it. That was the clear evidence of shock on the rear. Even in this service application, the slideometer had shot forward nearly thirty inches, which was far beyond the maximum of twelve, set by the committee as a limit. If its ruling were maintained, then the Westinghouse brake would have to be improved—or no railroad company could consider it.

Pete talked to the conductor as No. 119's engineer backed away to Middleton for the emergency tests.

"These brakes stop a string of freights more quickly than any other device. Nobody can deny that."

"Nobody will," answered Dan McGuire, "but just you wait till this gal makes the emergency stop. We'll be lucky if we don't bust through the front end of the crummy."

Mr. Westinghouse, the Brake Committee representative, and Pete Anderson waited breathlessly for the first stop signal. Dan McGuire seated himself on the floor. Pete, sitting back to the wall, heard the slack running in. It was coming in fast.

The car ahead of them suddenly banged into the one in front of it. Almost before he had time to realize what was happening, Pete found himself under a pile of cushions, the Committee man on top of him. The sound of the crash filled his ears. But he noticed that the train had come to a full stop in a very brief time.

The inside of the waycar was a shambles. The water barrel had been upset, and the floor was wet. The markers were knocked off, and the conductor's lanterns, their globes shattered, had rolled the length of the car.

Pete looked anxiously at Mr. Westinghouse. The inventor had gotten to his feet quickly, and stood amazed, staring at the damage his brakes had created. Several of the railroad officials spluttered about the degree of shock, but no comments were needed.

Mr. Westinghouse, however, seemed to be speaking to himself as much as to the men in the waycar:

"We stopped, all right!"

"I'll tell the frowsy cock-eyed world we stopped," McGuire was gasping. He staggered about the waycar, rubbing a skinned ankle with one hand and holding his smashed derby in the other.

"If all power brakes stop trains like this set does, I'll take mine out on top, clubbin' 'em down by hand."

The test train waited at the first section post while officials and committee members took stock of the damage. Mr. Westinghouse conferred with the CB&Q division superintendent. They talked with Dan McGuire and checked the records on the dynamometer. The head car had come to a complete stop in exactly fifteen seconds, three full seconds before the brakes were set on the rear one!

"That's almost a record stop," said Pete to the conductor. He didn't have to mention shock.

When they measured the slideometer's movement, which should not have exceeded twelve inches, they found that the sixteen-pound weight had slid nine feet in its trough.

"That's almost a record, too," Dan McGuire jeered. "When you throw a load of steers nine feet into the end of a stock car, you're goin' to have some beef that ain't been through the packin' house."

Pete could not deny it. The amount of shock to the rear had been far greater than he had feared. He heard the Car Builders' Association officials talking among themselves.

"I am ready to suggest that air brakes can never be made applicable to freight trains," said one member.

MR. WESTINGHOUSE was the least perturbed man on Burlington Hill. He reminded the members of the Committee that this was merely an experimental run.

"We can never make real improvements without actual trials," he told them. "This test has given me much of the information I need. We've always known that brakes applied serially from the engine aren't practical for a string of more than a dozen cars at most. This run has shown me that it requires a second per car for the reduction in pressure to reach the rear. We have got to find a method of applying brakes simultaneously throughout the train."

"How do you propose to do that?" a master car builder wanted to know.

"I cannot tell you. If I knew, that improvement would have been made already. But one thing is clear: compressed air is the most effective agent for power brakes. We have the stopping power now —we need only to perfect the method of controlling it."

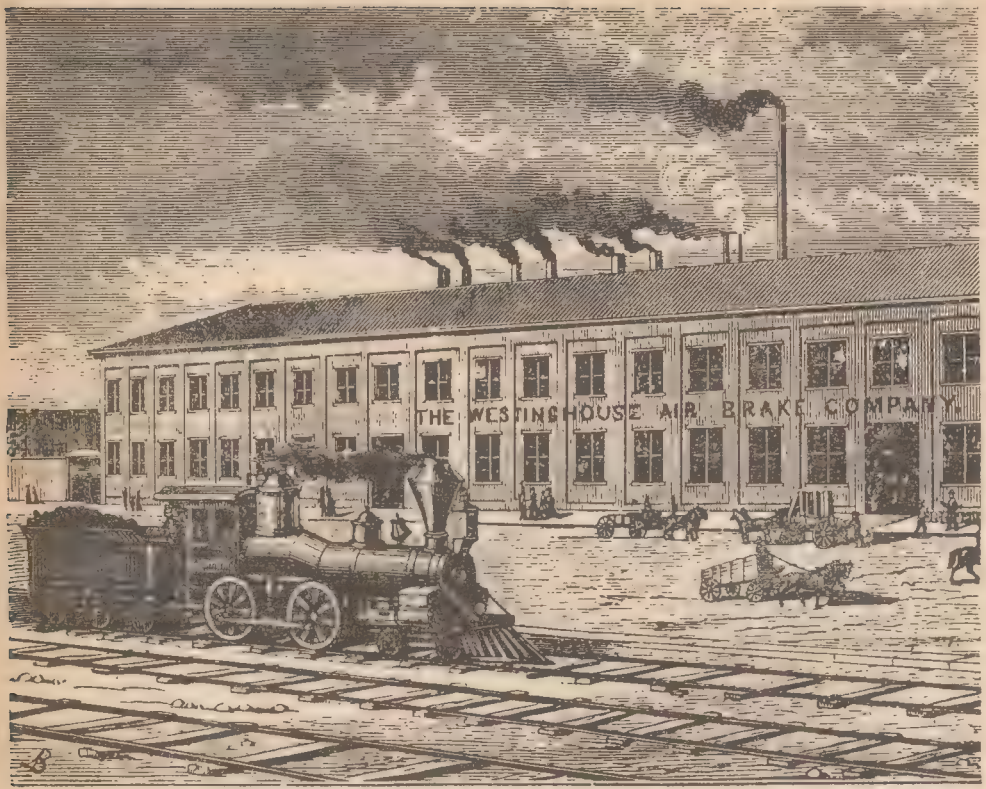
The chairman of the Brake Committee invited the manufacturers to a conference that night. He announced flatly that since the tests had failed to bring out a brake which even approached the standards set by the committee, it had been decided to conduct an entirely new series at a later date. The manufacturers asked for a year in which to create new and improved designs. April 15, 1887 was agreed upon, and the place, Burlington Hill.

The chairman then made clear the attitude of the Committee to the equipment used in the tests. "Widdifield and Eames lack the stopping power to meet our requirements; and we could not think for a moment of adopting a brake which causes the shock in emergency stops, demonstrated this afternoon by the Westinghouse equipment. It would damage rolling stock and freight in transit, injure livestock, and endanger the lives of the men in the waycar. The brake which we adopt must act smoothly and quickly. If such a brake cannot be built, then we shall be compelled to go on braking the freights by hand."

In the heated discussion which followed these remarks, Mr. Massye of the Eames Company said he was sure he could improve their equipment to increase its stopping power and eliminate the shock.

"Have you specific changes in mind?" the chairman inquired.

"Not that I care to discuss at the present time," Massye answered. "I shall return home and confer with our engi-



PITTSBURGH capital helped to build Westinghouse's first air brake factory at

neering staff. I am sure we can work out a device which will do the job both quickly and safely."

The chairman next turned to the man who had first shown the world how to stop trains with air.

"What do you propose to do, Mr. Westinghouse?" he asked respectfully.

"Do!" the inventor exploded. "Why, I shall return to Pittsburgh and finish the job—perfect my air brake."

AFTER the tests of 1886, when Mr. Westinghouse saw his equipment fail to meet the standards set by the Freight Brake Committee, he turned his mind once more to the problem of stopping trains. Soon after Pete's return to Pittsburgh, he was called into a conference.

The big executive laid his problem before them. He discussed, as he had explained to the brake committee after the emergency tests in Burlington, the difficulty which lay in the slowness with which the brakes applied.

"With them going on serially from the engine," he said, "it requires too long for the reduction in pressure to reach the rear. We must find some means of speeding up this application, some device which will cause the brakes to go on instantaneously or nearly so for the full train-length."

He called for suggestions. Immediately the subject of electricity was brought up. The new servant was being broken in and put to work. In Germany, particularly, scientists were turning to it more and more as a source of power which worked with the speed of light, doing tasks which neither steam nor air could do. The question of its use in applying train brakes was thoroughly threshed out.

Mr. Westinghouse told them what he had told Pete months before, that he him-

Wilmerding, Pa. This old engraving of the '70s shows the plant when it was new

self had invented an electrically actuated valve to set brakes with.

"It's a sort of electrical trigger," he said. "We could use it to release the air and let the air do the job. It would certainly work instantaneously; and we will use it as a last resort. I hope to devise a brake that sets by air alone."

An engineer inquired. "If electricity will do the work, why not use it instead of trying to invent a new device?"

"For three reasons, sir," the chief explained. "Wiring and installation of this electrical trigger would require added expense; we must keep the costs down. Electricity is unreliable, when a freight train needs a brake in emergency it needs it at once, not after some electrician has come on the job and repaired a break in the circuit. And finally, we must give railroad men a brake which is simple in operation. I know of no such device, except the one we are now using—the air brake.

"So let us forget about electricity for the present, and set our minds to the work of speeding up this reduction in pressure in the trainline of our automatic brake. We must solve the problem before the re-opening of the tests in Burlington."

But they did not solve it before the tests. One engineer suggested increasing the diameter of brake pipes and the size of vents in the valves to speed up the escape of air. They tried that. They made new valves, enlarged the vents in them, put in larger pipes. These changes, they knew, would hasten the application of the brakes; but Pete knew they had not solved their problem. They all did.

They kept working on it all fall and winter. They tried first one device, then another. They improved their brake; but they did not make it perfect. Mr. West-

inghouse, still hoping to capture elusive ideas and bring out a device which worked by air alone, asked for postponement of the tests. The committee set up the date to May 15, but Westinghouse was not ready.

Finally, when the time approached for the equipment to be assembled in preparation for the tests, the inventor consented to the use of his electrically actuated valves. Still contending that electricity was unsafe, that every electrical device used increased the chance of brake failure, he refused to use a valve in every car. He worked out a plan for cutting the train into sections, using an electrically actuated valve on every tenth car, thereby setting the brakes in short sections rather than directly from the engine.

This worked fairly well; but he told Pete it was only a makeshift, only a temporary expedient to be used only until he could work out a method of setting them instantaneously by air alone.

PETE was scheduled to go again to Burlington to supervise the installation of Westinghouse brakes on cars rented from the CB&Q. The inventor himself was expected later, with several other engineers from the plant. Before he left, Pete called in at the "den," to report that preparations were complete.

He found Mr. Westinghouse staring idly at a blueprint hung on the office wall. The big man turned when Pete entered.

"I don't like it, Mr. Anderson. There is really little use in your going to Burlington with the equipment we have. Yes, yes, I know, we have improved it—and I fear nothing from Eames or Widdifield. I am completely convinced that we are on the right track, but I am not satisfied with the brake as we have it now."

Pete thought of the hours they'd spent in the shop, with the boss watching tests of the new valves, inspecting parts, asking, suggesting, occasionally complimenting one of the shopmen on his work. But Pete was ready to agree that they had not reached a satisfactory solution to the problem of instantaneous application.

He walked over to the wall where the inventor stood before the framed blueprint. It traced the design of a Westinghouse air whistle, which enabled the conductor of a passenger train to communicate by signal to the engineer in the cab.

Pete knew how it worked. It consisted of a sensitive valve in the cab, a release valve in each coach, and a pipe, similar to the train-brake pipe, connecting them and attached to the reservoir. When the opening of the valve in the coach suddenly reduced the pressure in the pipe, a wave of air ran through the pipe leading into the cab. This wave opened the cab valve, and allowed air to escape through a whistle with a sound plainly audible to the engineer.

"Well, there is nothing more we can do before the fifteenth," Mr. Westinghouse's voice interrupted Pete's inspection of the blueprint.

But Pete only half-heard.

"Could we make a triple-valve to work in the brake cylinder like this whistle valve works in the cab?"

The older man's eyes flashed, as he grasped Pete's words.

"A quick acting triple valve?" he said quickly.

"Yes, sir. A quick acting triple valve."

"Why don't you make it yourself?"

"Because I am not an inventor, sir."

The brake wizard did not say then what he thought of the idea, whether or not he considered it feasible; but when Pete was leaving the office, Mr. Westinghouse wrung his hand warmly and wished him good luck on his trip to the hill where the second battle of the brakes was soon to open.

PETE left for Burlington that night to install the equipment which had already been sent out. He checked the cars being furnished by the railroad officials. They were a mixture of new cars and old, such as would make up any train for a usual road run. He organized his crew and went to work immediately.

All through the lazy spring days, as he directed the placement and the con-

nection of pipes, cylinders, reservoirs, and electric valves, he was tormented by a feeling of misgiving. He knew their equipment was weak. Those valves worked, but they worked imperfectly, as any makeshift device must.

Plenty of talk in Burlington made Pete no less anxious. Widdifield was not returning this year to the battle. He had been licked to a standstill last year, and was not coming back for more. The Eames company was sending a train. Rumor said they had drastically overhauled and improved their vacuum brake. They had switched to electricity and had thereby gained an efficiency far beyond any which might have been predicted from the showing they had made the year before.

But new contestants would give Westinghouse enough opposition. They included an electric brake made by Card, a Hanscome brake, and a mystery device, which had been invented by a man named Carpenter, of New York and Berlin. Carpenter, according to the talk in the yard, had once worked in the Westinghouse factory, though Pete did not remember him. Later he had returned to his home in Germany, and had there perfected the mechanism which he was bringing on from New York for the contest. Exactly what it was or how it worked were matters of rumor and speculation; but from hints dropped by Carpenter men, Pete gathered it was an air brake using electrically acuated valves somewhat similar to those employed in their own equipment.

As Pete heard more about the general use of electricity by other brake makers, he began seriously to question the wisdom of his chief in sticking to air. Perhaps his air brake had had its day, and the newer electrical type would take its place If that were true, if Mr. Westinghouse, holding to his theory that air was the only device safe and simple enough to use, had let pass the time for perfecting an electrical brake, then his company was ruined, and the legend of the mechanical wizard, who could solve the problems of many industries, would be at an end.

Visitors filled Burlington's hotel, even more than had come the year before. Besides the management and operating men of American roads, representatives from the railways of foreign countries had come to see what America could produce. The British had run brake tests ten years ago. They had chosen and standardized their braking equipment; but they sent men to the Master Car Builders' tests to discover new ideas.

On the morning of May ninth, the Carpenter train eased into the Burlington yards. Pete watched it come. It stopped with the smoothness of a limited passenger train. There was scarcely a rattle of brake rigging or a clank of drawbars. Like a jockey showing off his mount before a race, the engineer started and stopped again, then pulled proudly onto the track where the train was to rest until the day of the tests.

The young Westinghouse foreman felt even gloomier as he noted the railroad men who last year had been largely for Westinghouse, now turn to Carpenter. Pete listened to trainmen praise this newest comer to the braking field.

"That Carpenter train is going to be something to watch!"

"There's a brake that stops a freight train the way it should be stopped."

"It's goodbye Westinghouse when that slick job comes on the track."

PETE had to admit that these men might be right. He was worried, too, because the "old man" himself was not with the rest of the force from Pittsburgh when they arrived in Burlington. He found it hard to remember that the air brake was only one of Mr. Westinghouse's enterprises.

Other interests had kept him at home during this crucial period, but he had sent his brother, Herman, who was an official of the company, Mr. Nichols, his engineer of tests, and several members of the technical staff. But the inventor himself had not come.

His absence made Pete apprehensive, and as the time for the tests approached,

the young foreman felt that the boss would be needed. The plans for 1887 were far more inclusive and elaborate than they had been the year before, though the course was the same seven-mile piece of track between Burlington and Middleton.

Most of the tests were the same, including emergency stops, service stops, breakaway stops, and drift stops with trains of fifty and of twenty-five cars, loaded and empty. But in addition there was a series of holding tests, in which the engineer in charge would be required to bring his train to the top of Burlington Hill at twenty miles an hour, reduce speed to fifteen, and hold it without noticeale variation. A gravity test, in which each train was required to go down the hill without brakes, would determine the rate of acceleration.

The preliminary tests opened on the afternoon of May tenth. The Westinghouse equipment was first on the course. It made two runs that afternoon and two more the next morning, one with the engine and dynamometer car, then others to make a drift stop, hand-brake stop, and the acceleration test.

Carpenter brought out his mystery train the second morning in a pouring rain. Pete watched anxiously as the train ran off the six preliminaries and a seventh which the designer had suggested. The performance went through without a hitch. These runs meant nothing, of course, except as a matter of record; but the seventh run he made with a full train, fifty cars, using electricity to set and release his brakes. His time and distance scores were no better than Westinghouse's of the preceding year; but the slideometer told a different story. There was no shock on the rear. The iron bar had moved only half an inch. Had Carpenter solved the problem of shock by using electricity?

The third day Eames brought out his apparatus, still based on the vacuum principle, but changed so it was electrically applied and automatically released. The test train made six preliminary runs during the late morning and early afternoon. The brake ranked in stopping power well up with its competitors; its shock record stood between the two.

Another of the newcomers, Hanscome, followed with his string of cars. His brake was the simplest of all. It used neither electricity nor a triple valve, but consisted of a pump, a reservoir, and two pipes running through the brake cylinders. When the engineer wished to apply the brakes, he turned air into one of the pipes. When he wished to release them, he turned it into the other.

Just how this train might have ranked in the final running was not known, for when it went into the gravity test, it stopped of its own accord. It would not even roll down hill. The committee investigated. The axles had not been oiled, and the brake shoes were so tight they rubbed against the wheels. The train was soon withdrawn from the contest, leaving only four.

THE Card equipment interested Pete. He knew it was considered an electric brake, but Mr. Westinghouse would have called it electro-mechanical. The brakes were set by a chain winding around the axle. The set and release were controlled by a clutch actuated by electricity. It was an ingenious device; but as Pete studied its principle, he decided Westinghouse had nothing to fear from it.

The train backed to Middleton and came out for its first run, and its last. It made one good stop, and a perfect release. But in making the second stop, something had gone wrong with the wiring circuit by which the brakes were controlled. The engineer could not release them.

While Card engineers and experts were trying frantically to find the cause of the trouble, a local boy sauntered up to the group gathered around the train. He spoke to Pete, who stood on the fringe of the crowd.

"Say, mister, those brakes are holdin' too good, ain't they? Why won't the train go?"

Pete grinned at him and replied, "It'll go when they find the spark. They came

TYING 'EM DOWN was a tough job for brakemen when the old girl pulled a string of fifty cars and the hoghead signalled an emergency stop

away from Middleton without and had to send a man walking back for it."

The farm boy, who knew nothing about sparks, was satisfied, but the Brake Committee knew something of them, and they were not pleased with this demonstration of electrical efficiency. Pete was remembering Mr. Westinghouse's opinions on the subject.

This failure was enough to condemn the Card equipment, and the manufacturers withdrew their train from the tests. That left Westinghouse, Eames and Carpenter still in the race, with the "mystery brake" rapidly gaining favor with all of the officials and operating men who crowded the special train and watched the runs critically.

After the electrical devices had chalked up their preliminary runs, the brake makers turned their attention to the all-important emergency stops. Pete talked with the CB&Q crew who was handling the train for Westinghouse. They planned to make four stops, using the electrically acuated valves and a tight-wedged coupler.

Their record was good enough to compare with Carpenter's performance. At the usual speed of twenty miles, the boxcars rolled to a stop in seven seconds, requiring a distance of 165 feet. On the downgrade, they took only 665 feet and sixteen seconds.

In the second run, they made four emergency stops without electric valves, using only service air. The train stopped from twenty miles an hour on the level in 524 feet. The slideometer moved two inches. That was a stop well within the limit set by the Brake Committee. But at forty miles an hour, the brake revealed its old fault. It stopped the train in 1384 feet down hill, but the slideometer jerked ahead fourteen inches in its trough. Although this was only two inches more than the maximum allowed by the committee, they chalked down a black mark against Westinghouse for excessive shock, and Pete once more questioned mentally the wisdom of his chief in attempting to use air alone.

The Eames train followed Pete's train on the course for the last run of the day and week. The vacuum brake had stopping power now. It stopped the train in 379 feet from twenty-one miles per hour, and from forty on the grade in 1191 feet. But the brake caused excessive shock, as the slideometer showed by moving sixteen inches.

The Eames engineers were not satisfied with the results of this test. On Monday morning, they came again to Burlington Hill to repeat it. They failed to improve their record in two attempts. On the third run, however, they used their electrical device, and made a much better showing. The vacuum brake, electrically set, exceeded Westinghouse's record in stopping power and smoothness.

The Burlington *Gazette* neatly summarized the events of the following day.

"Carpenter was put on the gridiron Tuesday," wrote an enthusiastic reporter, "and stood the fire as though he were used to a hotter land than Iowa."

His first emergency run was a record-breaker. From twenty-two miles per hour, he pulled up his train in 143 feet and six and a half seconds; and from a speed of forty-one on the downgrade the string of cars stopped in 597 feet and seventeen and one half seconds. This was not only less time and distance than Westinghouse or Eames had required, but there was no impact on the rear. He repeated the run with even better results in both time and distance, and still no impact. Never in the history of railroading had trainmen and officials seen a freight train stop like that.

A TABULATED score of the results as they had been made from day to day showed Pete the comparative records of emergency stops from forty miles an hour. His score-card read:

Westinghouse: Distance 665 feet; time 16 seconds; shock, severe.

Eames: Distance 640 feet; time 17 seconds; shock, slight.

Carpenter: Distance, 575 feet; time 15 seconds; shock, *none*.

The figures spoke clearly for Carpenter. He had achieved the combination of stopping power without shock. That was the ideal that railroad men wanted. By using electricity throughout his train. Mr. Westinghouse could have accomplished the same result, Pete thought. But the "old man" had stuck to air.

After the emergency stops, the Carpenter brake had only to prove itself in the holding test. The committee had set a rigid standard of efficiency for it, because with a train going down a heavy grade there must be absolutely no brake failure. The engineer on the test train was to approach the grade running twenty miles an hour, then slow to fifteen and hold that speed down the hill.

Carpenter's train came by the post at the top of Burlington Hill going twenty-one. His engineer reduced speed to fourteen, edged up to seventeen, and then dropped back to fifteen, which he held all the way down the hill. That was good braking—a record for his competitors to shoot at.

The growing crowd of Carpenter admirers talked that night at Burlington. "Westinghouse can't do it, and neither can Eames," was their elated opinion.

"We'll know tomorrow," Pete thought anxiously.

The Westinghouse train was scheduled the next day for the holding test, but before going into it, the engineer, who had been thinking about his other runs and comparing them with Carpenter's, insisted on making a series of emergency stops, using the electrical valves. The Committee granted his request. He stopped his train from thirty-two miles an hour on the grade in 643 feet, and with little evident shock. This shaved the Carpenter record close, and overcame to some extent Pete's disappointment over their defeat in the other test. The record, however, had not been made with air alone. He doubted seriously that it could ever be that way.

The engineer then took the Westinghouse train into the holding test. The spectators talked excitedly among themselves, for the contest was proving even keener than they had expected. Carpenter hadn't won the decision yet.

At the section post atop Burlington Hill, the train was doing twenty-five. The old girl raced ahead, then slowed down to eight. The engineer tried to regain control, but the train's speed varied between that and twenty-four miles an hour all the way down the grade. Carpenter not only had beaten Westinghouse in stopping trains quickly but in controlling them at low rates of speed.

When Eames came out with his train on Saturday, he repeated the emergency stop tests, using electricity. He made a record stop on the down grade, the best he had ever done. The holding test on the hill was his downfall. The engineer set his brakes with steam at 140 pounds, but the pressure unexpectedly decreased — the train stopped dead still. He tried the run again, and held almost perfectly at fifteen miles an hour; but that dead stop was against him. The vacuum brake like other devices demonstrated at the trials, was on its way out, because the Committee would not consider a brake which could set on a hill and then fail to release. A failure of that kind on a regular road would be disastrous.

The exhaustive trials had lasted nearly two weeks. Carpenter was clearly in the lead in service and emergency stops, in holding power and smoothness. It appeared inevitable now that Westinghouse would go down to defeat before him. Carpenter was stopping his trains quickly, smoothly, and surely. Committee members who had been long-time friends of Westinghouse and had stood firmly behind him were slowly shifting their opinion in favor of Carpenter. He had been an unknown entry in a field of experts, including the man who had made the air brake a reality—and he had stolen the show from the master.

"There's the brake that can really stop the freights," the Carpenter fans repeated. Pete heard it in the Burlington yards, in the hotels, in the streets. Trainmen, railroad officials, the Car Builders Association

members were all clearly excited over the apparent solution to their problem.

The Westinghouse men confessed that they were losing confidence in their boss. Pete could not fail to remember that he and the other technical men had discussed electricity many times. They were saying now that the "old man" should have rebuilt his brake system to make full use of it.

GLOOMILY they left the CB&Q yards after the last Carpenter run. Pete saw the freight brake contracts snatched from them, and probably the passenger contracts, too. He pictured the Westinghouse Company at the end of its power. He imagined himself out of a job.

Mr. Nichols, the plant's engineer of tests, had wired several times to his chief, urging him to come to Burlington and take charge of his train. Finally, after Carpenter had scored his remarkable records, Westinghouse replied that he would come.

"Maybe the boss will have something to suggest," remarked the engineer of tests. "When he is here, he can see what we are up against."

Mr. Westinghouse arrived in Burlington Sunday night and called his men together. They showed him their tabulated records of the tests. He studied them, comparing carefully the records of his own brake with that of Carpenter. From the results set down in black and white, the men declared, the contest was lost. But the master inventor paid little heed. He merely continued his careful study of the test records.

"We have stopping power," he commented.

"But, sir," said the engineer of tests, "we've never lacked it. We stop trains in almost as little space and time as Carpenter without electricity. We do better still with a valve in every tenth car. With a valve in every car I believe we could equal his record or even better it."

"But I don't want a valve in every car —I don't want one in any car. I want a brake that works smoothly and effectively without depending on electricity, which is unreliable at present."

"But we don't have it," one of the men objected.

"We'll get it," said the wizard.

"Yes, we'll fool around here working with the impossible till we lose this contest—and the contract for these freight brakes." Mr. Nichols was outspoken in his opposition.

"I'd rather lose the contest than to sponsor a brake that is not safe, sir," Mr. Westinghouse answered.

"But electricity—"

"Gentlemen, you know my sentiments on the subject of electricity. I am deterined to improve the air brake without it. One of you"—he glanced at Pete—"made a suggestion in my office some weeks ago that gave a new slant on the triple valve. I think we can still show the Committee something."

Nichols listened impatiently.

"You'll have to do it soon, sir. The Brake Committee is becoming more and more interested in Carpenter's use of electricity. Unless you produce something before these tests are finished, they will adopt his brake, and discard ours."

"We'll produce it," his chief assured him. "You must remember that the task of solving a mechanical problem takes time and work."

Westinghouse closed the meeting.

HE CONFRONTED the Committee and the operating men with sound arguments the following morning. They listened to him. Mr. Westinghouse was a genius, and an authority in his field. He was the man who had first shown railroad men how to stop their trains with air. During the last decade his brake had saved passenger traffic managers millions in loss and damage. They placed full confidence in him, not only as an originator of new devices, but as a man thoroughly experienced in engineering problems. From the hour of his arrival in Burlington, Westinghouse dominated the scene.

He was on the field when the final series of tests began. Eames made four

emergency and service runs and one holding run. The first time, using electricity, he stopped fifty cars, thirty-three of them loaded, in 721 feet on the down grade. In the second test, without electricity, his brake stopped the same train in 1074 feet. His holding record was almost perfect. The Westinghouse brake had not been able to equal or even approach it.

When the Westinghouse train backed away to Middleton to begin the graduated run down Burlington Hill, the man who made the air brake gave personal advice to the locomotive engineer who'd use it. For the first time, the runner kept his train under control. He started down the grade at thirty miles an hour, and covered the three miles with a variance no greater than thirteen. On a second run, he cut this margin. He tipped over the grade at twenty-six and maintained the speed between that and fourteen.

This was by far the best holding record the Westinghouse equipment had made. The "old man" seemed to be working his old magic. But Pete knew that was the talent of a reasoning mind, able to detect an error in the handling of a mechanical device and to tell others how to correct it.

The special tests continued with Mr. Westinghouse dominating every movement. The Eames train returned to the course with the brake shoes loosened as they would be on cars which had been long in use. This service condition, retarded quick action, and 1155 feet were needed to stop his train on the grade from twenty-four miles an hour.

Mr. Westinghouse then brought out eight old passenger coaches fitted with his equipment. He stopped them in less than a thousand feet and in less than a half minute. He followed this with a train of old stock cars with worn brakes. He stopped this train in 944 feet in twenty-five seconds, but, of course, the degree of shock was marked.

Pete noticed how the boss was directing every phase of the work of his men. He directed them to change from old equipment to new for comparative tests. He stopped twenty-five cars from twenty miles an hour in 99 feet; but the slideometer registered excessive shock. Once more the bar slid forward nearly thirty inches.

Don't Blame the News Dealer

If your copy of *Railroad Magazine* arrives late, remember that wartime freight is often delayed. Magazines are not given priority. We print on time, but cannot guarantee prompt deliveries "for the duration."

This run was followed by consultations with freight carrier heads and the Brake Committee. After heated discussion, the chairman laid down its ultimatum:

"We cannot and will not adopt a brake which stops trains as roughly as your present brake stops them, Mr. Westinghouse. Carloads would be damaged, livestock would be injured, and men might be killed by the shock. Unless you can remedy the defects which cause it, then we must discard the Westinghouse brake and equip with another."

Once more Mr. Westinghouse assured them: "The defect *can* be remedied. I intend to install a new triple valve on which I am now working. It will eliminate the shock as effectively as electrically actuated valves. Before these tests are finished, I expect to be able to give you a brake which is safe, smooth and efficient, *and* which operates by air alone."

Pete's thoughts suddenly went back to the little office in the attic of the Wilmerding plant—and the blueprint on the wall.

"A quick acting triple valve, Mr. Anderson?" he heard the boss saying.

Yes, but how? Pete remembered the experiments, the modifications they had tried again and again in the shop, in the months before the second Burlington tests. But he and the other Westinghouse men had to wait until the design was completed, until the mechanical genius was sure of his plans.

CARPENTER succeeded in lowering his time and distance record once more before the series of scheduled runs had

FARM IMPLEMENT factory run by the senior Westinghouse in Schenectady was the young inventor's first workshop

been completed. Time: sixteen seconds; distance: 452 feet—Pete marked up the figures on his own tabulation, and could not help but agree with the Car Builders and the operating men, who shook their heads in amazement. To make stops like that with a regular freight would mean increased efficiency such as they had never dreamed of.

The final two days of the trial were hectic ones for Westinghouse engineers. They were preparing to make their last series of service and emergency stops, and expected to make a fair showing. Meanwhile, Pete watched the evolution of a new triple valve.

He saw diagrams, specifications, designs of parts sketched hurriedly on the backs of envelopes, on brown wrapping paper as the inventor worked at an improvised desk in the waycar of his test train.

Railroad men were finally to see the air brake wizard's often repeated opinion of electrically actuated valves fully confirmed. In a final holding test on Burlington Hill, Carpenter's brakes failed to set—the wiring broke through a connection made by one of the crew, not an electrician, and the train, out of control, rolled down grade until brakemen with clubs went high on the roofs and stopped the cars as they had always stopped them, by hand.

"They've done it," said Pete to Mr. Nichols, the engineer of tests, "what every other electrically operated brake has done at one time or another here. Ours is the only one which has never failed to set or release properly."

The Car Builders' Committee had the clear records before them. The Carpenter equipment offered smooth, quick-acting power, without complete reliability. The man who had relied completely on compressed air had shown an equal speed

MODERN PLANT of the Westinghouse Air Brake Company at Wilmerding, Pa.

and power, lacking in smooth operation but with infallible action. It was obvious that neither device fulfilled the requirements for a dependable, efficient freight brake.

But Westinghouse was not finished. Before the Car Builders could reach any conclusions or announce their decision, the inventor had dashed onto paper a final, completed sketch of the new triple. Pete saw that the original design was altered to permit some of the trainline air to flow into the cylinders and help apply the brakes instead of going all the way to the engine. The problem of getting uniform reduction throughout the strain would be solved—and with it, the problem of shock which had plagued the Westinghouse brake experts for nearly a year.

Specifications and directions were immediately wired to the Wilmerding plant, with orders for fifty of the new valves to be built at once rushed to Burlington. Although the scheduled tests were finished —the Car Builders had indicated that no immediate decision could be made—Westinghouse arranged to use the CB&Q's stretch of track for experimental runs.

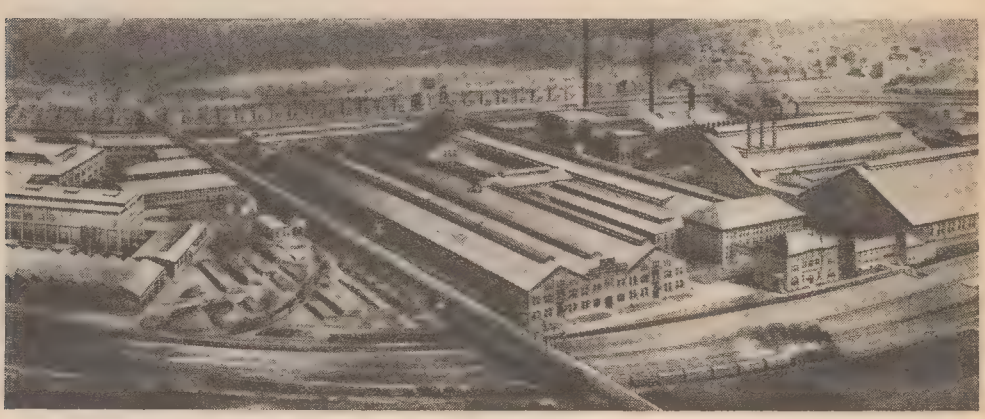
When the new triples arrived, Pete studied their construction. The principle which made the air whistle work with the speed of sound had been revised and applied to a larger mechanism. He and his crew worked eagerly at completing the installation job.

Mr. Westinghouse came back from Pittsburgh to direct the new tests. He gathered a group of railroad officials in his car at the rear of the train when the first run was to be made. Pete himself rode in the cab. He had instructed the engineer to blow the whistle and set the brakes at the same time. When the moment came, white steam spiralled up from the dome and the sound of the whistle came back on the waves of air. At the very instant when they heard the whistle sound, the brakes went into emergency on the last car of their train.

The quick acting triple valve, the valve which set emergency brakes on a train with the speed of sound, was a success. A device which skilled and unskilled men alike could use without fear of failure when danger forced them to an emergency stop had been perfected. The last run at Burlington Hill, the one which the crowds missed, was the greatest.

The Westinghouse staff returned to Pittsburgh to equip a train of fifty new Pennsylvania boxcars with its new brakes. This train made an exhibition tour to Chicago, and the West. Contracts for freight brakes poured in, from the Chicago & North Western, and the Union Pacific, from the Pennsylvania and Santa Fe. Pete Anderson found himself in charge of a new factory built entirely for the job of turning out the piece of equipment which he himself had had some part in originating.

There was no doubt about it now. Westinghouse had opened a new era in railroading, an era of accentuated speed with safety. History had been made on Burlington Hill.



Cajon Pass

EARLY SPANIARDS named the yucca timbered trough extending down the west slope of Southern California's San Bernardino Mountains "Cajon", meaning ***long box.*** Through this defile the Santa Fe made surveys in 1881; ran its first train over the Mojave to Summit and down the Pass into San Bernardino on Nov. 15th, 1885. Today the road grants trackage right to the Union Pacific between Barstow and Los Angeles, via the Cajon

"THERE'S no place I'd rather go than up the Cajon to hear the three-engined freights and double-headed passengers blasting their way to Summit," writes Herbert Sullivan, who took the remarkable series of photos on these pages.

Born of a railroading family in Manitoba, Canada, he moved to Southern California before he was of age to follow three of his uncles into engine service on either the CPR or the Great Northern.

Today, he is a successful citrus fruit farmer and a confirmed rail photographer by avocation. He uses two cameras: a 4 x 5 Graphic (Zeiss Tessar lens) and a $3\frac{1}{4}$ x $5\frac{1}{2}$ Zeiss Ikon (7-inch Dagor). Much of the excellence of his pictures rests in the fine exposure which produces brilliant landscapes, without compromising engine detail

ABOVE: Head-end of the UP manifest shown on the preceding page. A third engine is cut into the center of the train. Both UP and Santa Fe (see photo below) place hacks behind the rear helper for the 3.6 percent eastbound climb from Cajon Station to Summit

RIGHT: Extra 3839, with two helpers, swings seventy cars over Cajon Creek. Pushers are usually cut out at Summit and return to Cajon light

LEFT: For fifty-eight years, crews have kept a look for the ***Phantom of the Cajon***, a dancing flutist with flying blouse and jaunty Tam-o-shanter. Clearly visible in this photo, he's a combination of shadows, brush and a seam in the face of the rock; makes a brief appearance on sunny mornings, around ten o'clock

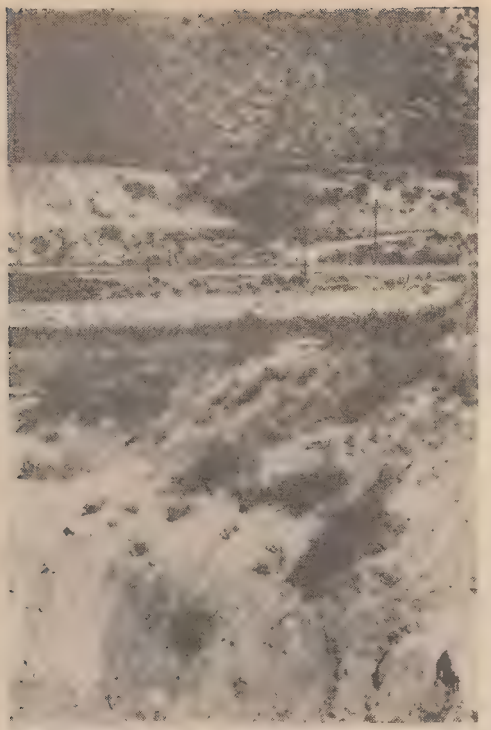
BELOW: The Pass has two single-track gradients, forking near Cajon station. East or upbound line (foreground) is 8.5 miles long. Descending trains use steeper 6.5 mile route against the canyon wall

DOUBLEHEADING the *Grand Canyon Limited.* Operator at Summit will allow 5 minutes for engines 1226 and 3758 to cover the 3-mile block to the west of him

EIGHTY-INCH DRIVERS, but she's still a match for the Cajon with the *Chief*. Santa Fe motive power officials are well pleased with their fleet of 4-8-4's; have still another batch currently on order with Baldwin

REFRAIN from braying hoarsely, steam fans. The pretty little graphite-faced Pacific isn't hauling a dead Diesel, but her added tractive effort will be needed for the climb ahead. This pleasing picture is repeated with appropriate sound effects at Raton, New Mexico

MEASURED BEAT of two engine exhausts is ***Pacific Limited's*** salute to Milepost 60. Cajon Pass is in First District of the Santa Fe's Los Angeles Division

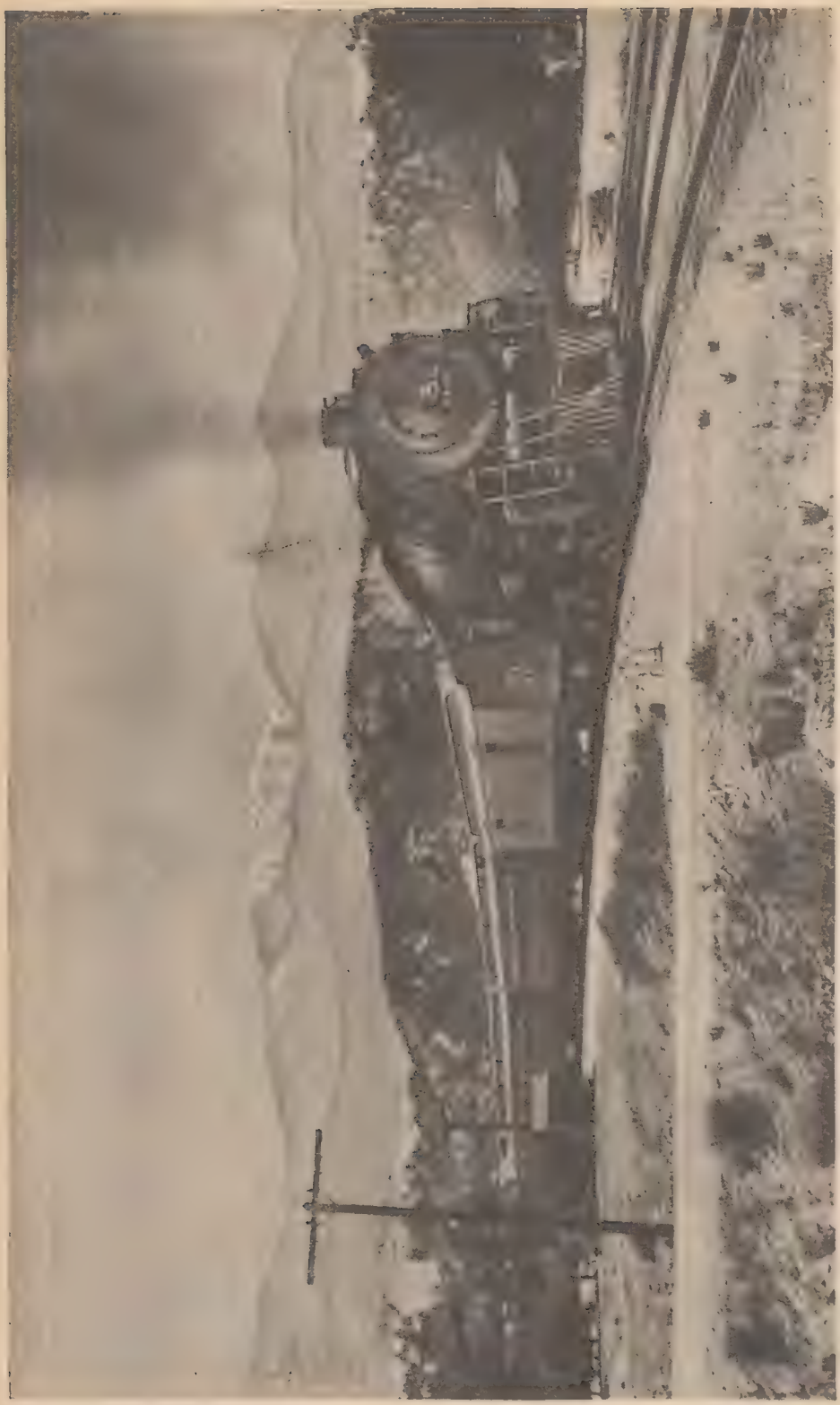


RIGHT: White flagged 1676 is a 34 year-old 2-10-2; a wheel arrangement which originated on the road in 1905. Hence, the adoption of its title, ***Santa Fe*** type

BELOW: 1926 version of the system's Santa Fe type is twin sand domed 3897. Her power is being transmitted to the cars in the left background through an eighth of a mile of center sills and draft gear

THESE turreted guardians of the Cajon once echoed the drub of flaying hoofs and the harsh cry of the Pony Express rider. In the shadow of their sand-blasted flanks, too, rested Jebediah Smith—first American to make his way overland to Southern California

SNAKING them skyward around the horseshoe. Close examination of Sullivan's pictures shows that despite variety of composition, the greater number were taken within a radius of a thousand feet of one another



OLD *Navajo* at Alray in the Cajon. This train was discontinued several years ago

TWENTY three years of Baldwin motive power devolpment. Pacific 1226 was built in 1905, Northern 3758 in 1928

True Tales of the Rails

Actual Happenings
Told by Eye-Witnesses

By
CHARLES
W. TYLER

My First Run

BOSTON AND MAINE RAILROAD

A LOT of smoke has gone up the stack since I tried my hand at railroading on the Fitchburg Division of the Boston & Maine, back in 1912-13. Things were booming then, as they are now, and it was easy to get a job on the road.

I don't know about student railroaders now, but back in the "good old days" they were pretty terrible. A lot of them hired out, and most of them quit before they knew what it was all about.

Many young fellows got the notion that railroading was a soft, romantic life, but they were quickly disillusioned, and went back to their old jobs, feeling that if they never saw an engine and a string of freight cars again it would be too soon.

Railroad men came to regard a student fireman or brakeman with the same distaste exhibited by your Aunt Emma when she cast her eye on something the cat had dragged in.

Looking back on those hectic times, it strikes me that a lot of grief might have been avoided if the old-timers had explained to the student a few of the fundamental facts of life as they apply to the gentle art of railroading. On the other hand, I suppose the harried conductor or engineer figured that it would be love's labor lost to waste breath on some wild-eyed, sooty young squirt, who stood poised and ready to flap his wings and fly away on the slightest provocation.

The first night I climbed aboard an engine on my own, there in the East Fitchburg yards, a young engineer examined me by the light of his torch, and what he saw, I'll warrant, filled his weary

soul with sadness. I don't remember his name, and it doesn't matter. He was a great guy, and he had a heart of gold, but they'd done him wrong. It developed that I was the fifth green fireman who had graced the deck of that old 2400-class hog since it had pulled out of Northampton, Massachusetts, some fourteen long hours earlier.

When the runner had looked me over, he just took a deep breath, rolled his eyes to high heaven and said, "Judas wept!"

I didn't weigh one hundred and forty pounds soaking wet, and I had been dodging switch engines and falling over booby-traps out there in the yards, trying to find the right engine, until I was pretty wild-eyed and skittery.

I never saw so many men in a locomotive cab—and they were all mad. When I stumbled in they looked at me as though I were to blame for the woe that filled their souls. There was the conductor, head brakeman, night yardmaster, the engineer, another guy—and yours truly.

Apparently the engineer took it for granted I was to be his fireman.

"How long have *you* been firing?" But he wasn't asking—he was accusing me.

It began to dawn on me that there was something wrong. The night before I had gone out for the first time as a student fireman. We had made two trips up "the hill" as a helper. Roy Rines, who was later killed when Number 2 hit the light engine at the Fitchburg depot (old-timers will remember that) was the fireman.

On the second trip up the hill, Roy let me shovel in a little coal, but the Mogul

being used as a helper "chowdered" her fire and he had his troubles without bothering with a greenhorn, so I didn't get to do any more firing. I just sat up there on the seatbox with the flagman and watched Roy, who was one of the best firemen I ever saw.

Tonight I had supposed, of course, that I would again go out with the regular fireman. At that time, on the Fitchburg, a new man made three student trips before he was turned loose on the spare board.

"I'm just a student," I said, in answer to the engineer's question. "I was never on an engine until last night."

The engineer looked at the conductor, and the conductor looked at the yardmaster, and the fire in that old 2400-class freight engine wasn't half as hot as the language.

"We're on short time," yelled the conductor. "We'll be canned before we get to Lawrence. We've got to have a fireman!"

"You've got one!" the yardmaster retorted. "Take your blank-blank string of freights and get out of here. You're tying up the yard."

I SPOKE up finally: "Where's the regular man?"

I was really scared. There was some mistake; I was supposed to make two more student trips. The crew dispatcher had merely told me to go out on the 2423 (I think that was the engine number), which was down in the east-bound yard.

"This so-and-so of a job hasn't had a regular fireman since I caught the blank-blank run," said the engineer.

The skipper looked at his watch, and then at me. "You're the fireman," he growled, "so bow your back and have at it."

"Where's your water jug?" said the head man.

I didn't have a water jug—just a pair of fancy leather gauntlet gloves that were supposed to be the last word in firemen's regalia. I jerked at the chain that swung the firedoor and cast a glance inside. That firebox looked as big as a boardinghouse living room. There was no arch, and the fluesheet had "doughnuts" around the flues. These so-called doughnuts were little clinkers that formed on the lip of the flue openings, partly choking them off.

The head brakeman—they called him "Aroostook"—took a look, also the conductor, who tried to knock off the doughnuts with the hook, but it was too short. Aroostook took one of the torpedoes that he had clamped to the bail of his lantern and threw it against the fluesheet, where it exploded.

This brought a shout from the engineer.

"Hey, you backwoods lunk!" he yelled, "do you want to start the damned old teakettle to leaking?"

Muttering "The hell with it," Aroostook went out on top.

The engineer dropped the Johnson bar down in the corner and went about the business of getting underway. The conductor gave us a parting benediction and climbed out of the gangway to wait for the buggy to come along.

In those days, if a fireman wanted a decent scoop and fire hook, he had to rustle around and steal them off another engine before he started out. The scoop on this 2423 was a number five, as I remember it, and a number five holds enough coal to last a frugal family through a hard winter.

We chuffed and pawed out onto the east-bound main, and were off for Lawrence, Massachusetts—wherever that was.

I heaved in coal, and hoped for the best. The steam pressure dropped, but we managed to keep going. The engineer hung out of the window, and apparently forgot all about me.

At last I noticed that we were picking up speed. I never gave a thought to whether we were going up hill or down. The cab was starting to sway around, and the steel deck was so slippery that I had hard work keeping my footing. I figured the faster we went the more coal it was going to take.

It seemed that they had taken on coal at East Fitchburg, so there was plenty of it within reach. I loaded that number five scoop and made a pass at the firedoor just as we hit a curve. My feet flew out

from under me, and the coal landed in the engineer's lap. I tried again, and missed the door by a foot. It was impossible to stand up on that slippery deck.

I fixed that, shoveling coal on the deck, a good six inches deep. The exhaust wasn't making so much noise now, and the fire-box had a funny, clouded look, but that didn't mean a thing to me; I knew only that we were batting along like a run-away team.

When we pulled into Ayer Junction, the runner said, "Well, I guess you've got enough coal in that damned firebox to last us to Lawrence." He seemed quite happy about it.

Some bird came up out of the blackness and said, "What job is that?"

My boss answered, "Mister, this is the Bull-tail Flyer." Those aren't his exact words, but they're near enough.

CHAS. W. TYLER

We had to wait about an hour for some job coming up the branch from Lowell, with the result that we never did get to Lawrence that night. The dispatcher tied us up in Lowell.

THAT was where I found out what kind of a guy the engineer was. When I hired out, I had just money enough to pay a week's room rent in Fitchburg. A friend vouched for me at an eating house, and I got a meal ticket, but it was no good in Lowell. I had exactly ten cents in my pocket.

I told my troubles to the engineer. He took me under his wing, and we ate. I bunked with him at a hotel, and when our eight hours' rest was up he bought my breakfast. We picked up our engine and caboose and went on to Lawrence, where we turned and coupled onto a drag, heading back to Fitchburg.

When we took coal and water at the East Fitchburg roundhouse, I went into the crew dispatcher's office, thinking I was done with this job, but was told that I would have to go back to Northampton, where 2423 had started her run. I pleaded then for a loan, but I guess the dispatcher figured he'd never see me again, considering the way student firemen were quitting. Anyway I didn't get any money, and I sure was discouraged.

Why I didn't quit right there, I don't know. But I got back on the 2423 and we highballed out. I don't remember how many times we stalled on Ashburnham Hill, west of Fitchburg, but that old engine just curled up her toes and died for want of steam all over the road.

It was then that I found out what a snare and a delusion those fancy leather gloves were. When I hooked the fire, that steel hook would get red hot for half its length, and the heat back toward the handle fried those leather gloves to a crisp.

Before we finally tipped over the hump at East Gardner, I had petered out, and I was sure sick of railroading. Going up the hill, everybody in the crew but the flagman took a crack at firing the old 2423—the engineer, the conductor, and Aroostook.

They shoveled over coal on the tender, and dumped the ashpan and dug out clinkers. They cursed and blew her hot, and we staggered on. It was mostly downhill from Gardner to East Deerfield, and I was feeling a little better when we pulled into the yards.

Here we picked up some more cars, and finally headed up the branch toward Northampton. When we pulled in, we'd been on the road close to sixteen hours.

The engineer said, "Well, you know a hell of a lot more about firing than you did last night."

My arms ached, my back ached, my face was black with coal dust and my hair was full of cinders, and all I wanted was to crawl away somewhere and die a peaceful death. I had even forgotten about being hungry.

I went over to the tower, and told the telegraph operator that I wanted a tele-

graph pass back to Fitchburg. A message came through for me finally, but it wasn't a pass. The wording I remember very well. It read:

> C. W. Tyler: You will take your rest and then fire the job back to Lawrence.

I said, "You tell that bird to jump in the lake. I am a sick man."

I slept the rest of the night back of the levers on the floor of the Northampton tower. In the morning I took my tale of woe to the conductor of a passenger train that was about to pull out for Greenfield. I didn't have a pass or any money—I just wanted to get back onto the Fitchburg Division.

The conductor looked me over, and I remember yet the little twinkle in his kindly eyes. I hadn't washed up, and I guess I looked pretty frazzled and woebegone.

"You get right aboard, son," he said. "You look as though you had earned a ride."

You remember that I said I had a dime when I left East Fitchburg. I still had it. When I arrived at Greenfield I headed up the street toward a lunch wagon, and climbed aboard a stool. I told the hasher I had just ten cents and asked him what it would buy the most of.

"Beans," he said.

And beans it was—the best ever.

LATER I got on an engine going to East Deerfield, and there boarded an eastbound freight. I swung off at Athol and went into the telegraph office. I sent a message to the East Fitchburg roundhouse, asking them to mark up Fireman Tyler as sick. I was ashamed to say I was quitting, but at that moment I never intended to go back.

I had worked in L. S. Starrett's tool works in Athol, and knew a lot of people there. I hunted up Arthur Lewis, a friend of mine, and he took me in. I enjoyed the luxury of a bath and a shave, and ate such food as I had never tasted before.

This was Sunday. The next day I went back to Fitchburg and told them I was ready to go to work again, and they put my name on the spare board. So ended my three "student" runs.

Later I incorporated parts of that Lawrence-Northampton job in fiction stories. My first fiction story was the result of it—"The First 303." Robert Mackay bought the yarn for the old *Railroad Man's Magazine,* and it was published in the October issue in 1913.

After that I turned my hand to writing railroad fiction, then general fiction, and have been at it ever since. I still like to hang around where there are engines and trains, and often when I hear a locomotive whistle at night, I wish I were back on the deck of that old 2400-class engine, on the Boston & Maine, riding the rails to Northampton.

Track Foreman

By WILLIAM J. VAN WINKLE

EVEN a trackman's job has its share of excitement—you can never be certain what will happen next. It wasn't only routine construction and repair work that I stepped into when I hired out as section hand on the old Burlington & Missouri at Tecumseh, Neb., in 1888. Maybe the time and place had something to do with that.

When I first started shooting ballast, the great trunk lines were being developed and expanded across the prairies. As track foreman and later roadmaster, I worked through Oklahoma, New Mexico, and Colorado with a number of these roads. I saw the last frontier disappear, as the rails reached into every section of the old Southwest.

I grew up on a Nebraska farm, where one of my chores was to help corral the stock. That was a job to be done quickly when a blizzard threatened in that wind-swept country, and if my father wasn't there to help, mother and I often had more than we could handle. A neighbor used to come over on his coal-black saddler and round up the entire lot for us in no time. My father always tried to pay him for helping out, but the man on the black horse would laugh it off as something trivial. That horseman who was willing to lend a hand to his neighbors in so friendly a fashion later became one of the West's most daring train robbers, Jesse James.

In my career as track foreman and road-master, I was to meet others of James's profession, under much less agreeable circumstances. But the kind of quick thinking and fast action that I was to need then had its beginnings on my first jobs in Nebraska.

Soon after I started work as a section hand, I got a chance to be foreman at Firth, Neb. We were busy then replacing the old iron rail with new 52-pound steel —first on the Firth section, and then between Tecumseh and Auburn, where we removed the old steel cap ball rail. In 1892, after T. E. Calvert invented the ball split switch, several of them were sent out over the division for installation, some being left for me to supervise.

Mr. Brecken, roadmaster for the B&M, ordered me to put in six of these new switches over his division on a certain Monday, the 28th of the month. My payroll was due to be sent in that same day, but I figured it out on Sunday, and with eight of my best men, we had the switch installed by 9 a.m. on Monday. On my way back to the depot to sign the payroll, I saw Mr. Brecken on a three-wheeled hand-car, just arrived from Tecumseh.

He barked at me before I had a chance to speak. "William, why aren't you installing that switch?"

I told him the job was already finished. That calmed him down somewhat, and he had me run him down to see it. He went over to the switch stand, took out his keys, and inserted one of them in the new switch-lock. After throwing the switch to the side track, he tugged at the key.

"William, my key won't release," he said.

I answered that it would come out only when the switch was set for the main line. Mr. Brecken seemed satisfied, and walked back to inspect the frog and guardrails.

"She looks fine," he complimented me, and with a glance at his Hamilton, asked me for a man to run him back to the depot.

A few minutes later I heard the passenger train some distance down the track. Something suddenly made me remember that Mr. Brecken had left his keys in the lock—the main line wasn't open! The target was already red when I got to the switch—I threw it in time to prevent a wreck.

For several months I did little but install these new split switches over the division, and in 1893 my men and I were sent to Chicago, where we demonstrated them at the World's Fair.

AFTER leaving the B&M in August, 1894, I went to Oklahoma to work for the Choctaw, Oklahoma & Gulf. That company was busy building the road between Oklahoma City and McAlester, a town in the southeastern part of the state which was then Indian Territory.

During the winter of 1895 we could hardly get material enough to keep my gang busy. A boom was on in Oklahoma City, and the town was spreading out of bounds. The local officials decided they wanted the area occupied by a certain graveyard incorporated within the city limits. They convinced Mr. Pollock, superintendent of construction for the railroad, that the work of removing the bodies to another cemetery could be done by my gang during our first slack period.

Within the next few days I had some of the men digging up the boxes and hauling them out for burial at the place where another gang was digging new graves. All of the bodies seemed to have been buried in home-made coffins. Several had been "planted" in their cowboy at-

tire, together with saddle and six-shooter. A certain colored man in my excavating gang would dig down to the coffin but would go no further—he would start then on another grave. One day the box caved in with him on top of it. When he climbed out he was already running. I never saw him again.

In the long run the cause of railroading didn't suffer whenever we took time out from our regular job to lend a hand in this way. On the contrary, such extra service was usually repaid, directly or indirectly, by somebody or other.

As a gesture of gratitude in return for our moving the cemetery, the Oklahoma City "fathers" and the county sheriff were eager to help the CO&G when the road ran into right-of-way difficulties not long afterwards.

The company had instructed me to disregard the graded roadbed a few miles east of McLoud, and to start laying the tracks straight across the grassland. In this way we were going to use less area than we had originally agreed on, and none of us expected any protest from the owners. The Canadian River was nearby, and we had no pile driver, so we had to crib up with ties and bridge timbers.

One morning when I arrived with my gang to continue work, I found several men and a woman occupying a makeshift shack erected only a few feet in front of our iron car. Two men walked up to me, each with a hand on his holster.

"Mister, you ain't layin' anuther foot of track till you pay fer this land," said one.

It seemed to be no time for argument. "How much do you want for it?" I asked.

The fellow set his jaw and glared at me. "Five hundred dollars."

I put my men to work surfacing track and wired Mr. Pollock, the construction superintendent, in Oklahoma City. That afternoon he arrived with the sheriff and several deputies, who wanted to dispute the demands of the squatters and run them out of the country.

The Oklahoma officials might have been right from their point of view, but I took Mr. Pollock aside and suggested that the company could lose a lot more than five hundred dollars by antagonizing such people in a territory the road was helping to develop. I thought we should pay them their price. The superintendent evidently agreed, for the next day the woman and one of the gun-toting squatters met Mr. Pollock peaceably in Oklahoma City, to receive the company's check. Though the local authorities were more than willing to help the railroad with force if necessary, I think we gained something—in prestige at least—by settling that way.

TWO MEN walked up, each with a hand at his holster

Sometimes the railroaders themselves got real rewards by co-operating heartily with towns which wanted rail service in their communities as soon as possible. While I was still laying track for the CO&G's line from Oklahoma City to McAlester, the citizens of Shawnee, a point along the route, made us an offer. The St. Louis office wrote me that if I could get the track into Shawnee by the Fourth of July, the city would treat us, and the company would pay a substantial bonus.

This news electrified the men. Instead of the one mile we'd been laying daily, we put down two miles, and at 11 a.m. on the Fourth we had the track beside the depot, where two hayracks of beer in kegs awaited our pleasure. The paymaster with our bonus money arrived a few minutes later, but the free beer had already put in its punch, and most of the bonus checks weren't claimed until some days later.

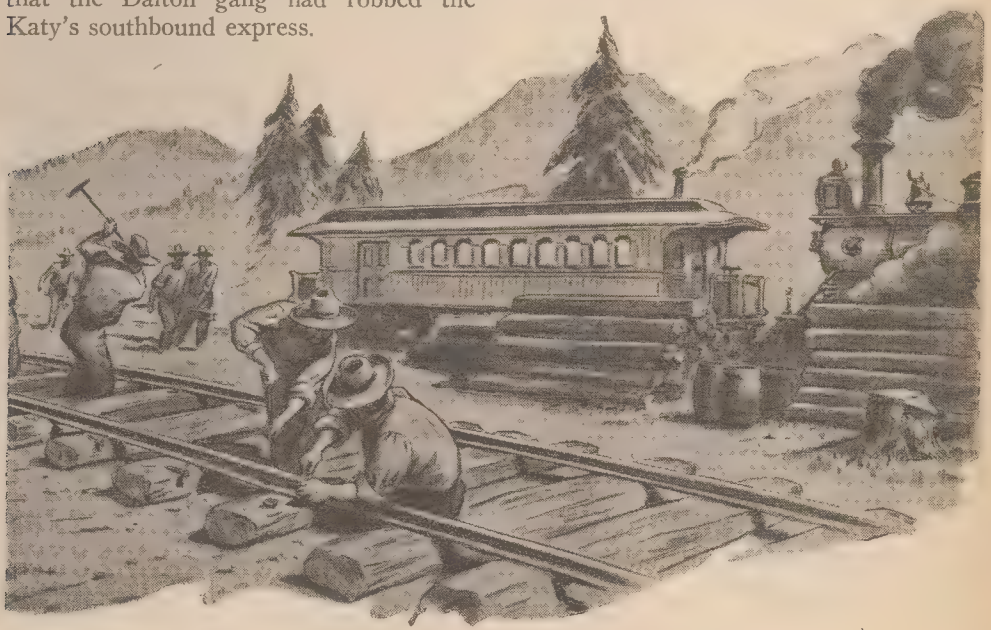
Before I left Oklahoma, I had one experience which showed me that that section wasn't completely tamed. I served a brief trick with the MKT, working mostly near Caney, then in Indian Territory. One morning when I walked to the station there, to get a line on the trains for the day, the agent reported excitedly that the Dalton gang had robbed the Katy's southbound express.

He gave me the details. The notorious robbers had stopped the train around eleven-thirty the night before, at the water tank above Caney. They made the engineer cut off with the mail cars and pull up not far from the spot where my extra gang had been working that day.

I recalled then that in the late afternoon, four or five strangers had ridden up to the right-of-way where we were working. They seemed to curiously inspect the layout, then disappear into a nearby wood. Those horsemen were probably members of the Dalton gang. Not long after the Caney hold-up, the boys took part in a robbery of the Coffeyville, Kan., bank, when they were finally caught.

Oklahoma had meant tough railroading with odd jobs like grave-digging thrown in. But I had learned that handling construction work meant almost anything in those days. That was proven to me when I was working farther west, as trackman for the Colorado & Southern at the turn of the century.

I WAS supervising the job of resurfacing C&S track between Trinidad, Colo., and Folsom, N. M., in the summer of 1899, when a stranger stopped at my camp car one day. My wife was accus-



tomed to cowhands dropping in occasionally, and she answered his request for something to eat by inviting him to share our meal. When he was ready to leave, the visitor put a twenty-dollar gold-piece on the table.

"No," my wife protested, "we never take anything from the cowmen who happen to drop in on us at dinner time."

The stranger was insistent. "Go ahead and take it—buy yourself a new dress."

As he was leaving, he noticed our children playing in the shade of another car nearby. He talked to them briefly, and we discovered later that he had given each one a ten-dollar gold piece. Gold pieces weren't unusual then, but such wealth wasn't common either. However, in those days you didn't ask too many questions of strangers.

W. J. VAN WINKLE when he was C&S track foreman

A few nights later I discovered who our guest was. The regular C&S passenger train Number 2 stopped suddenly near my camp cars, and I knew something was up. The conductor, Frank Herrington, hastily explained what had happened. One of the outlawed Ketchum brothers, known as "Black Jack," had attempted a single-handed robbery of the train. He had stopped the engine on a sharp curve a few miles up the track, but the engineer, ordered to cut loose the express car, couldn't budge the Miller coupling because of the tension given it by the curve. When the express messenger stuck his head out to see what was going on, Black Jack fired a slug that shattered his chin.

Frank wanted me to board the express car and see what I could do for the messenger until the train reached Trinidad. I hastened to do what I could, and by tying a towel under his chin and up over his head, managed at least to stop the flow of blood. Meanwhile I got the rest of the story from the conductor.

I knew that this C&S run had been having trouble. On the night of July 19th Sam Ketchum and his brother, known as Black Jack, had held up a passenger train south of Trinidad and had shot it out with a posse who tracked them into Turkey Canyon, a hundred miles away. Sam was wounded fatally and Black Jack made his way toward Folsom. The posse hadn't been able to take him.

Suddenly I realized that the silent fellow with the pocket full of gold pieces who had stopped at my camp car for something to eat rather than go into town was probably Black Jack himself.

The C&S conductor was sure that it was this man who had attempted the second robbery. He told me what had happened. When the messenger was shot, Frank put out the train lights, and managed to get a glimpse of his target near the express car. He emptied his sawed-off shot-gun at the bandit. Frank knew that he had hit him for he saw Black Jack jump away from the train and stumble out of sight.

The next morning the company sent me and some of my crew with the deputy sheriff to the scene of the hold-up. Black Jack's horse was still tied to the fence near the curve, and we found the bandit himself, weak from loss of blood. His right arm had been ripped to pieces by Frank's shot. With a crude stretcher made from a couple of fence rails and a pair of overalls, we got the man onto the baggage car. He was taken to Trinidad, and later to Clayton, N. M., where he was tried for his crimes and hanged.

THAT was the end of Colorado & Southern's troubles with the Ketchum brothers, and for some time I found myself supervising routine track work, with only the usual difficulties to contend with.

Back in Folsom in July, 1901, I was running an extra gang when S. L. Rainey,

Superintendent, wired me to come to Trinidad on the first train. I was in his office at nine the next morning.

Mr. Rainey came to the point. "William, this town's out of water, and all three lines through here are hauling their supply so they can keep on operating."

I asked, "What am I supposed to do —dig some wells?"

Ignoring my quip, the boss explained that the city got its water from a reservoir made by a dam across the Purgatoire River, about sixteen miles from Trinidad. The snows in the mountains had been melting so fast recently that the dam had given way, and a water famine faced the city despite floods in the canyons.

I wasn't an engineer, but I had a clear idea of what had happened, and I realized that the authorities in Trinidad had wanted me to come and take a look at the situation. A span of mules hitched to an old-fashioned buckboard was waiting outside to take Mayor Wood and myself to the dam site.

When we got there, we found about a hundred men uselessly filling sacks with sand and dumping them into the river, only to see them washed away without any effect. On the near side of the river some twenty feet of the dam, including the headgate, stood intact.

I took a quick look at what was left of the structure—the headgates still there gave me an idea. A trackman usually carries a small level-board with him—mine was in my pocket. I placed it atop the headgate, and sighting over it, I saw that the water some three hundred feet upstream was higher than the headgate.

The Mayor looked glum. "What do you think of it?" he asked.

I told him what I'd figured out after using the level-board: "With the water upstream higher than the headgate, I can dig a ditch and build a dyke along this side of the river—that'll put water in the headgates in a hurry. Give me that gang there, with their picks and shovels, and I think I can have water in your city by tomorrow morning."

Mayor Wood lost no time in instructing the foreman of the men filling sand bags to turn them over to me. I immediately started them to work digging.

Just then a stranger stepped up and introduced himself. "I'm the superintendent of construction on the Colorado & Wyoming—I have a gang of a hundred and fifty men laying track about a mile from here. I'll bring 'em down if you can use 'em."

Within an hour his gang was at work on the ditch. By seven that evening we had the water running in the new ditch. I stayed all night at the dam site.

Next morning a courier came running. He told me that Trinidad had gone wild, celebrating the return of water to the hydrants. Mayor Wood came up not long afterwards with a similar story. Whistles were screaming and horns were blowing in Trinidad. The mayor put his arm over my shoulder.

"Mr. Van Winkle, you're the man we want to rebuild the dam."

"Oh, I'm working for Mr. Rainey and the railroad," I protested. "It would be up to them."

The superintendent insisted that I finish the job. I had the able assistance of the bridge foreman and his gang from the C&W, and the dam was pronounced a success ten days later.

Before I left Trinidad, Mr. Rainey called me to his office and told me that J. A. Kebler, general manager of the Colorado Fuel & Iron Company, wanted me to go to Redstone, Colo., as a roadmaster on the Crystal River Railroad. At the same time Wood offered me the job as chief of Trinidad's water department.

Railroading was my business, so it wasn't hard for me to decide to take the Crystal River job. I was a roadmaster with that road until 1907, when we closed operations because of depletion of the coal deposits that gave the road most of its business.

I've spent most of my life in construction work of one kind or another. Right now I am living in Douglas, Ariz., and working as an inspector at a Government air base. The old Southwest is gone now, but those bygone days afforded plenty of adventure while they lasted.

Woman Op

By SUE R. MOREHEAD

WHEN the Japs hit us at Pearl Harbor, I was busy being a housewife, and hadn't begun to think of the railroads as weapons of war or as a job for me. I started some work for the Red Cross, but it wasn't long before I wanted to do more. And as thousands of other women in this country found their places relieving men in essential industries, I found mine—right in my own back yard, so to speak—as train order operator on the Southern Pacific.

Railroading seemed the natural thing for me, since my husband is an SP switchman at Tucson, Ariz. But Tal never says much about it at home. "I work eight hours and I'm tired," is what I usually hear—I was soon to understand that as never before—so I had never realized how many orders it takes to get a train over the road or how difficult the special language and the regulations could be. If I had known, maybe I wouldn't have hurried to apply when I heard that the SP was planning to hire women operators.

The men on the Tucson Division call the forty-five mile stretch of single track between Stockham and Picacho "the bottleneck." In ordinary times it is hard enough to move trains over this line, but nowadays troop and equipment trains plus many more extras are added to the regular schedule. To speed up this route, the SP decided to open offices or helping stations at various sidings.

I called the Superintendent's office for information about getting one of these new jobs. They told me to go out to any little station along the line, listen in, study the Book of Rules, and let them know when I felt qualified to take the examination. Being a telegrapher wasn't necessary for one of these spots.

I went out to Cortaro, near Tucson, and found a new woman operator there, Grace Chaffin. She had been working only a short time, but green as I was, I thought she was pretty good. Since then I've realized that she didn't know much more at that stage than I did.

Comparatively few orders are given at Cortaro, but I listened in as much as I could. I remember now that I copied down everything I heard without having the vaguest idea what it was all about. It was the same way with the Book of Rules, I admit; I had them word perfect, with little or no understanding of what they meant. Mrs. Chaffin let me OS the trains and report them coming, east or west, to the dispatcher, and that was my preliminary training for a job of my own.

It was the fourteenth of August, 1942, when I called Ted Carey, trainmaster's clerk in Tucson, and told him I was ready to take the Book of Rules. I got through that, passed the physical exam and was vaccinated. Then I bought a standard watch and awaited my first call. It wasn't long in coming, for the next day I was assigned as second trick operator at Naviska, Arizona.

I got out to the station, about twenty-six miles west of Tucson, in time to pick up a few pointers from the first trick man. By the time I'd been on the job alone for an hour, I realized I'd been a fool not to ask more questions. If it costs the railroad a certain amount to make an operator, as the saying goes, I know I used up my allotment those nights I worked at Naviska.

As long as it was daylight and I could see the trains coming, I got along fairly well. After dark I had only kerosene lamps, which gave off a feeble yellow light, and a strong, repulsive odor. And I soon discovered that I was lost trying to tell by the signals which way trains were coming and when to clear the train order board for them. On the SP the

train order signal is always kept at stop position except when no orders are to be given.

Sam Kennedy was the dispatcher and I had him fairly pawing the air. I could have told him I was new, but it was probably just as well that I didn't—he must have guessed it, anyway. He wasn't easy to work with, I thought, but when I had him as dispatcher later, at Cartaro, I found out that it could be done, with a little consideration of Sam's nervous system.

I GOT my first train order some time after dark. Suddenly I realized that I had never written an entire order, had never repeated any part of one to a dispatcher, never cleared a train, nor handed up an order on a hoop, until I found myself out there alone, twenty-six miles from nowhere. It was hot in that old yellow coach on the desert, but all the perspiration that saturated my clothes wasn't the result of the heat. My hands shook, my throat was dry and so constricted I could hardly get the words out when I tried to repeat the order.

Old heads from Stockham to Picacho kept breaking in and correcting me. I had the address of every station the dispatcher called along with my own on the order. Somehow I completed it, and with much prompting from Sam Kennedy, I got my clearance made out and OK'd. Then I prepared to go out and hand up.

I had literally no idea how this should be done. Common sense told me that I should have a light of some kind. I found an old hay-burner lantern, of the type car inspectors use to throw a spot.

The train was nowhere near the station when I went out and placed myself entirely too close to the track, lantern at my feet and hoop in the air. By the time the extra got close, my arm ached and my whole body trembled. The big 5000 coming toward me with its headlight shining in my eyes loomed larger and larger; I had a moment of paralyzing fear, when every instinct told me to light out from there and keep going. But my legs refused to obey, and I stood rooted to the spot, with that black, one-eyed monster bearing down on me.

I held the train order hoop tightly, and only the fact that I stood too close and

HANDING 'EM UP at Stockham, Arizona: Sue Morehead, train order operator, gives the flimsies to SP Engineer Earl Smith

the brakeman missed the hoop kept me from being pulled into the train. The head man came back after the train stopped and took the order. With amazement, he advised me not to stand so close and to hold the light up so that the hoop could be seen. I mumbled thanks, and as the engineer whistled off, I held up the hoop in one hand and the lantern in the other while the full length of that endless freight went by. The rear brakeman got the order all right, and I staggered back into the office to find my bell ringing frantically. I know now that the dispatcher thought I had been either killed or hurt.

The second night at Naviska wasn't much better than the first—no hits, no runs, all errors. By the third night, my vaccination was giving me quite a reaction, and I was dizzy from that, too. To top everything else, we had one of Arizona's sudden electrical storms, and the lightning knocked out the train order signal. I had to hand up clearances to all trains.

The dispatcher was going wild and I was a wreck. About ten-thirty he asked me if there was anybody around who could fix the light in the signal.

"No, sir," I answered wearily, "there's no one here but me and the bugs."

I must have sounded sadder than I thought, for Sam Kennedy's voice was almost kind as he assured me there would be no more trains before midnight.

The next morning the office called to say that I had been relieved by a telegraph operator, and they would let me know when they needed me again. Frankly, I thought that was the last I'd ever hear from them, and for a week I was so sick from my vaccination that I didn't care.

WHEN my second call came—I was assigned to the first trick at Rillito to relieve the operator going on vacation—I hesitated. Remembering my three nights at Naviska made me shiver, but I heard myself agree to go.

Rillito is an intermediate point with a water tank. It had been a station before the war, and orders were given to every class of train, east or west. Troops and equipment trains, perishables, regular freights and passengers were heavy in the summer of 1942. I had no typewriter at the office, and had to write all my orders with a stylus. It's a good twenty-five feet from station to track at Rillito, and the first week I was there I had charleyhorses in my legs and writer's cramp.

Most of what I learned came the hard way. I kept the Book of Rules at hand to refer to, and asked innumerable questions. The dispatcher I had, Albert Butler, was patient and considerate, and finally, what had once been a jumble of words and phrases took on meaning and made sense.

Some of the trainmen and engineers got peeved, and some laughed at me, but most of them went out of their way to help when they saw that I was honestly trying. A number of train crews tied up on sixteen hours there, or died on schedule, or met other trains. The men would take me out and give me their advice on where to stand, and tell me to step back and wait for the caboose before going close again to hand up to the rear man. Sometimes I felt like bunching the job and going home to my pots and pans, but more often, I thanked my lucky stars for a sense of humor and made up my mind to get the job down right.

I learned a lot at Rillito, though I couldn't help worrying about the mistakes I made. I thought that the penalty for stopping a train was nothing short of death. But I found out that it is far more important to give correct orders, even if it means stopping the trains, than it is to hand up a bunch of incomplete orders on a half-finished clearance—on which, if they're good rails, they'll have to stop.

When I went to Cortaro as second trick operator, I was thankful for my added experience at Rillito, for I found that I had Sam Kennedy again as dispatcher. I'm sure he was horrified when he heard my voice, and I don't blame him, for he couldn't have forgotten the trick I worked at Naviska. But I stayed at Cortaro two months, and gradually he began to give me more and more orders. By the time I left he was putting out as many as any operator would receive at that station.

Sam was a nervous fellow, with a sharp

voice, and when he said, "Copy three," I soon learned to put five in the mill, and if he said five, he invariably meant seven. All of us who worked with him for any length of time caught on to his system, and saved ourselves recopying. He had a habit, too, of putting out an order when a train was almost at the station, and his last words were, "Don't stop him."

As I worked with him and got to know his methods better, I often told him that if the train was to get the order, I'd have to stop it. Gradually we got on more smoothly, and when I was relieved by a regular operator bidding in the job, Sam said he hated to see me go.

While I was at Cortaro, I broke in another woman operator, and I heard later that her first assignment was at Wymola, last station before Picacho. A brakeman off an extra west happened to be in the office a few days after she'd started there.

"We were coming through Wymola the other morning," he said, "and this girl was standing out there with the hoop up till we got nearly on top of her. Then, by golly, she just took out across the desert, orders and all! We had to stop, and I chased after her. I asked her what happened that made her run like that, but she didn't have any explanation."

I might have laughed, but I didn't. I knew how she felt. That same thing had almost happened to me at Naviska.

I found myself back there around the first of November, with Mr. Scott as dispatcher. His wife was an operator along the line, and maybe that helped him to be particularly agreeable to women railroaders. I liked the way he called a slow freight a "boondoggler," or told me to "get out there and keep 'er mowin' 'em down" when he gave me an order. All of us enjoyed working with him, and were sorry when he left the SP in December.

DURING the winter months, the bottleneck was plugged often. Two and three crews tied up on sixteen hours at the same time, some of them getting no further than Naviska out of Tucson. I marveled at the way railroad men can sleep anywhere—on the floor, the desks, the counter, or in a chair. It was cold, and often the rails were covered with frost.

Mr. Scott broke in a new dispatcher before he left. Young Mr. McClintock could get into more jackpots and tie up the railroad tighter than any DS I ever worked with. His language was tough.

Blanche Anderson, operator at Cortaro, whose husband is a yardmaster in Tucson, didn't hesitate to put McClintock in his place. After she'd taken a good deal of rough talk one night, she finally said:

"Young man, if you don't watch your language, I'm coming up to wash your mouth out with soap when I get off duty."

That outburst surprised McClintock, and from then on he was very decent to all the women operators on the line. Later Blanche and I both met him and liked him. Lack of confidence and inexperience probably made him act as he did.

From Naviska I went back to Cortaro on first trick. Orrin Key was my DS, and my first impression was that he didn't like women railroaders. But I found that if you hit the ball and could take it, he'd treat you all right.

Finally I got a chance at Stockham, one of the two main train order offices on the bottleneck. I used to hear Bob Walsh rattle off orders and clear one train after another with never a slipup, and I'd wonder if I'd ever be good enough to work there. I've been on the midnight shift for four months off and on now, and only wish I had enough "whiskers" to hold it as a regular job.

I have been working on the SP for more than a year. When I shoveled coal and stuffed the cracks in that old coach at Naviska to keep warm in winter, or fought the bugs and tried to keep cool in summer, I thought of the boys fighting overseas. I know that I am lucky to be here in Arizona, OS-ing trains on the bottleneck. When the war is over I'll be ready and willing to step out and give the job back to a railroad man returning to his own work, but I shall miss it.

Electric Lines

Conducted by STEPHEN D. MAGUIRE

Pacific Electric

LARGEST interurban network in America, the Pacific Electric Railway operates more than 1000 miles of electrified trackage. Its roots date back to 1895, when the 10¼-mile Pasadena & Los Angeles Electric was opened.

Today PE extends from the blue Pacific to the snow-garbed mountain ranges of San Gabriel and San Bernardino, offering modern freight and passenger service within a 60-mile radius of Los Angeles. The system would have been even greater if it hadn't rashly given up a lot of trackage during the past decade, in common with other juice outfits—trackage which might have been very useful in moving the present wartime traffic!

Abandoned rail stretches of PE include the scenic run to Mt. Lowe, the popular shore route between Venice and Redondo Beach, the branch to Temple City, and busy city lines in Redlands, Pasadena and Long Beach. The company also cut

Pacific Electric photos from C. E. Wright, M. A. Miner, H. L. Kelso, Steve Maguire

ABOVE: Pacific Electric's Los Angeles narrow-gage didn't stop running when Seattle and Los Angeles baseball teams paraded down Spring St. in 1903. Just see that Pasadena car creep up on the electric carriage

LEFT: Modern 4-tracked right-of-way. Car 1027 skims through cut near Alhambra

or discontinued passenger schedules in other sections where its chief income was derived from freight. For example, the entire eastern trackage beyond Covina is now "freight only."

Including its 2900 cars (600 passenger, the rest freight and express equipment), PE represents an investment of more than 110 million dollars. Under control of its parent, the Southern Pacific, the electric system bought 25 multiple-unit PCC cars for the Glendale-Burbank line. Since 1941 it has added better than 100 cars to provide for the sharp increase in passenger business derived from the war. Today PE, in common with roads all over the country, enjoys record-breaking passenger and freight activity.

MAP OF PE SYSTEM: Dotted lines indicate freight service only; open lines, abandoned routeage. This network, the greatest interurban on the continent, radiates from Los Angeles and has more than 1000 miles of electrified track

OVER a timber trestle wheels 2-car train of 600-series suburban cars. They are remodeled versions of the 708, shown directly opposite

Corrected to October, 1943

COMBINE 1378, with Railroad Boosters aboard, passes No. 100 of the San Bernardino Colton line

VENICE SHORE LINE'S 973 at Santa Monica station, terminus of the route. Fenders are being removed from these old red cars now

THROWING the switch at Vineyard, Calif., for Venice Boulevard line's 708

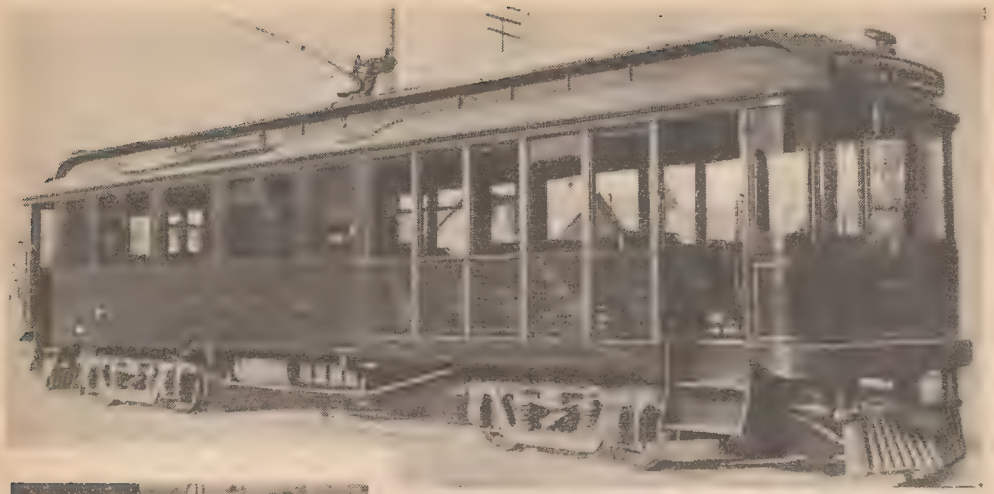
PE LINE SHOTS. Top: Working on the overhead at Monte Sano, on the Glendale line. Tower car 00164 was assigned to this stretch of track, used for freight service only when this picture was taken. Left: Closeup of line car tower. Note heavy insulators between platform and roof deck. Bottom: Catenary on 4-track right-of-way at El Serano. PE has greatest form track mileage of any interurban system in the country

OIL for war. Freight motors handle interchange traffic with SP, UP and Santa Fe

PACIFIC ELECTRIC and Espee swap carload lots at eleven points

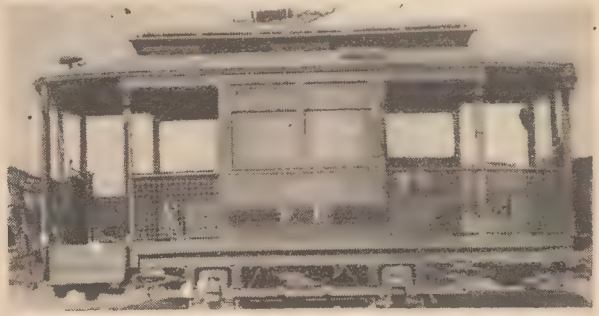
BOBBER 1952 at San Bernardino

CLOSE-UP of a freight job. Note the blackout hooded headlight



CAR Number 257 was optimistically designed to please everybody

PE once ran Mt. Lowe incline



BUILT in 1903, the 1800 was in service for thirty years. Below: Scenic Mt. Lowe narrow-gage at Cucila Bridge

Car-Barn Chatter

OLD ELEVATED CARS. In California, the Richmond Shipyard Railway of the Key System is refitting its former New York Elevated cars with steps to the ground level, for use in both express and local service.

"These old-timers will replace the articulated types now giving local service due to the el cars' lack of steps," we learn from A. H. Frietzsche, 1852-10th Ave., San Francisco 22, "and will free the articulateds for more service on the trans-bay line to San Francisco."

The pinch of equipment was evidenced by the return to regular service of the Key System's oldest car, the 271, built in 1902 for Lehigh Valley Transit and subsequently sold to KS. Except for a few railfan excursions, No. 271 had been pretty much in retirement since the 1930s.

Mr. Frietzsche also tells us that two more lines are running again in the Oakland area, Route 1, East 14th Street, and Route 3, Grove Street to Berkeley. Workers in Oakland war plants benefit most by the resumption on these two lines, but lack of equipment may prevent further change-overs to rail operation.

* * *

TUNIS has an interesting interurban system, in and around the war-torn North African city, according to a letter just received from Sgt. J. A. Riepe, U. S. Army, formerly of Beacon, N. Y., now serving under General Eisenhower.

"It reminds me of the old New York, Westchester & Boston, that abandoned service in 1938," he writes, "especially in its use of stations at car-floor level. Overhead wires are employed in the city limits of Tunis, but only about half a mile of track is in the city streets. The rest is third-rail right-of-way. Big, double-truck, wooden cars haul MU trains."

The signal system used there, Sgt. Reipe reports, consists of a square piece of sheet-metal or wood turning on a pivot and controlled by a wire running to the nearest station. When a "clear board" is indicated, the plate is swung sidewise to the track, showing a white light that authorizes you to proceed. To stop the train, the plate is swung facing the oncoming cars and shows red through the colored glass in its center.

Our correspondent adds that the city cars are single-truck and modern-looking. They haul as many as three trailers apiece. Track (meter-gage) seems to be in excellent condition. Much operation is side-of-the-road, but some downtown lines were not in use at the time Sgt. Riepe wrote, because the retreating Nazis had cut down mile after mile of transmission cables, thus causing an electricity shortage.

* * *

OPEN CARS: For a War Bond rally in Yale Field recently, 78 of the Connecticut company's 80 open cars were used to transport the crowds. And every Saturday during football season, 35 or so of these summer vehicles are put to work. The information comes from John J. Hanlon, president of the newly-formed New Haven Car Rider's Club, 865 Chapel St., Room 424, New Haven, Conn.

This club has a local membership, but offers an associate membership to juicefans from out-of-town at $1 per year, which includes 12 issues of their *Electric Railway News*, featuring New England items of interest, past and present. The members have pooled their juice negatives and are selling photos as a means of obtaining funds.

* * *

VICTORY VACATION. A pleasant way for a juicefan to spend his vacation is revealed by Edwin Belknap of Indianapolis. Back in the heyday of the Indiana Railroad, Ed had the time of his life working as ticket agent. Then came an unfortunate abandonment of rail service, and Ed was obliged to drive busses on the same line.

Last summer he was given a month's leave of absence, coupled to his regular vacation. With all this time on his hands, Ed decided to look for a job as a rail motorman. Through a connection with the Portland Electric Power Co. he found that his former rail experience qualified him for the work, especially since the company was hard-pressed for men during the summer vacation period.

"I got a big kick out of the job and being paid for it, too," Ed says.

Who knows of other juicefans who spent their vacations in a similar manner?

Steve Maguire

SUGGESTION: "Why not have a short article each month on one of the various electric lines around the country?" asks Charles K. Given, 3411 Brunswick Ave., Drexel Hill, Pa. "You could run photos of cars, barns, right-of-way, etc., also a roster of equipment. It would be very popular."

Do readers like the idea? Perhaps some fan has unusual shots and information that we could publish as a brief picture-story on his "pet" line. We are swamped with *ordinary* views of streetcars and interurbans but welcome donations of *different*-type material, both pictures and facts, including anecdotes and reminiscences.

Another exponent of this policy is Robert Scoon, 1317 W. 116th St., Cleveland, O., who would like us to begin with the Niagara Gorge Line. Bob writes:

"I have just read a story of an unfortunate wreck on that line in the winter of 1917. After the first car had left its terminal, a soldier guarding one of the bridge abutments noticed a section of track wash into the river. He ran to a phone and told the news to company officials. Meanwhile, the car had reached the damaged section of track. As it passed over, the rail collapsed, throwing the car into the river. The guard jumped in and saved several passengers, but many others were washed down into the whirlpool, along with the car body.

"At a subsequent inquiry the soldier was blamed because he didn't stay at the track and flag the car. Investigation revealed that the washout had been caused by seepage into the concrete roadbed alongside the river."

* * *

COOPERATIVE TRANSIT: Tenth Anniversary of operation of Wheeling, W. Va., rail and bus lines was celebrated last August 1st by the Cooperative Transit Co. A 16-page folder, replete with old trolley photos, was issued in honor of the first decade of this employee-owned outfit.

Back in the depression days of 1933, employes of the then Wheeling Traction Co., bought the property from the receiver at a public sale, using funds that they had contributed so that transportation facilities for the Ohio Valley might be preserved and jobs be made available in those hard times.

The anniversary folder gives a thumbnail sketch of the history of Wheeling's streetcars. Earliest operation was by horsecar, in 1865. Construction of an electric line was begun in 1887 and the first trolley ran along Wheeling streets March 15th, 1888, using Van Depeole cars. Out of these lines emerged the Wheeling Traction Co., which operated the cars until the receiver's sale in 1933, when Cooperative Transit was born.

Photo by Wm. V. Kenney, 90 Walworth St., Roslindale, Mass.

CAR 102 of the Phoenix, Ariz., Department of Street Railways

Photo by F. R. Vaughn, 2107 Claremont Terrace, Utica, N. Y.

THE ROAD TO ROME, N.Y., was paved with sleet after the big storm of March, 1910. Traffic was tied up 32 hours on the Rome-Little Falls interurban cars of the Utica & Mohawk Valley (later part of N.Y. State Rys. system), abandoned July 1st, 1933. The gentleman with an ax was Supt. French of the Mohawk car barns

LANGLEY FIELD RY. "Reading in the August issue of remnants of former juice lines recalled my home-town line, the Hampton & Langley Field Ry.," writes Pfc. Kenneth W. Ackerly, Domestic Transport Command, Rosecrans Field, Mo.

"This pike used to operate into the heart of town," he continues, "but busses have since taken over passenger service. The freight line, operated by Virginia Public Service Co., formerly used a wooden motor, No. 220, to haul freight, but last year a steeple-cab electric locomotive, No. 200, was bought from the NYNH&H."

* * *

NEW YORK-BOSTON. Last month we outlined a trolley trip between these cities in the early 1900s via New London and Providence.

This route was in competition with another popular New York-Boston juice trip which turned north at New Haven and passed along to Hartford, thence up to Springfield via the Hartford & Springfield Street Railway. At Springfield, it turned eastward and using the Springfield street car tracks as far as Palmer, Mass., joined the Worcester Consolidated system in to Worcester. Matter of fact, both Worcester and Springfield cars operated between those cities, each company running alternate cars for the distance. At Worcester, the Boston & Worcester gave a fast interurban ride directly into the city famed for baked beans and codfish.

Several other routes diverged off those we have mentioned, thus providing slightly different trolley trips between New York and Boston. But no matter which way you went, you had to pass over the Shore Line Electric or Hartford & Springfield St. Ry.

* * *

BAD NEWS: Resumption of trolley-car service on the entire route of Norton's Point line in Brooklyn, N. Y., which we proudly reported in our September issue, lasted barely two weeks, and "stink buggies" have been put back on the route. The reason for this is somewhat foggy. We do not even know whether or not the necessary ODT permission was secured by the BMT Division. One company official naively told us that bus

Photo by Stephen D. Maguire

ROCHESTER (N.Y.) TRANSIT CO. Number 50 stands in front of the new, $30,000, subway-lines shop which accommodates only six cars at a time

operation had been resumed because "patrons complained they didn't like trolleys."

* * *

TRACK LAYOUT: "Your photo of the CSL track crossing *(Oct. issue, page 119)* is an example of why smaller traction lines had to change to busses," writes C. A. Brown, Rutledge, Pa. "Only heavily traveled lines could afford such an expensive replacement. The one shown in the photo cost $110,000.00, according to the Chicago Surface Lines. Construction of a subway underneath the tracks at this point made the replacement necessary."

Regarding interrurban lines crossing, Mr. Brown cites the North Shore as passing under the Milwaukee Electric at Lake, Wis. He says several CSL routes go under the Chicago Elevated, while the North Shore operates on El tracks over these city lines, as well as the regular elevated service, making them "triple juice crossings."

* * *

CANADIAN COMMENTS. After reading the list of Canadian car builders sent in by Robert R. Brown *(Oct. '43)*, Victor L. Sherman submits a few additions. Vic's address is No. 8, B&G School, RCAF, Lethbridge, Alta., Canada.

"In my home town of Vancouver," he writes, "my acquaintance with the cars dates back for years. Many streetcars running in Vancouver are home-town products, built in the British Columbia Electric shops at New Westminster. Most of them were wooden, single-end, deck-roof jobs that recently emerged from the shops, after rebuilding, and have become different-looking vehicles. Deck roofs are gone; the interior is completely remodeled."

The BCER also built many interurbans. Cars 1200 to 1216 now serving the Marpole, Steveston runs, are home products, as are 1303, 4, 5, 9, 10, and 11. The latter group are a much heavier type originally built for the long Fraser Valley line. Another builder Mr. Brown did not mention is G. C. Kuhlman Co., of Cleveland, O. Cars 1306, 7, and 8 are products of this builder.

"I can add the following to the list of companies who have supplied the BCER," Vic concludes, "Preston Car Co., Canadian Car & Foundry, J. G. Brill Co., J. Stephenson, St. Louis Car Co., American Car Co., Ottawa Car Co., Baldwin Locomotive Works and Dick Kerr, Ltd. (England). Kerr built locomotives 990, 991 and 992."

Another RCAF man, G. M. Beach of Regina, Sask., expresses surprise that Andrew A. Merrilees missed the Regina Municipal Ry., in his list of juice lines in the Maple Leaf Dominion *(Sept. '43)*.

"The Regina line is very modern," he points out, "and operates 30 miles of track, 30 passenger cars, sweepers, plows, freight cars, and 5 busses. It has a fare of only

5 cents, one of the lowest in Canada. Today, with less equipment than ever before, it is handling more passengers, and doing a very successful business. Service is entirely within the city limits. Cars serve the residential, manufacturing and business centers."

We now come to Bill Malcolm, 140 Sherman Ave., S., Hamilton, Ont. Bill reports that on a recent trip through Ontario he found that all equipment of the Cornwall city lines was second-hand but in excellent condition. He says business there is thriving.

"At the time of my visit," Bill declares, "the Superintendent was leaving for Virginia, down in the States, to buy a juice hog. Their cars also came from the States—from Jamestown, N. Y., and Eastern Massachusetts and, more recently, two from Wilkes-Barre, Pa., these two having been numbered 344 and 350 but are now 34 and 35.

"Recently the Cornwall Street Ry., disposed of several Birneys, as the management is not partial to single-truckers. Much of the street trackage is being relaid with 80-pound rail under fine cement paving. During the depression not long ago the Cornwall system and the British Columbia Electric were the only juice lines in Canada that continued to pay dividends."

Bill adds that while he was visiting the barns and shops he was shown every courtesy. Besides conducting him through the buildings, company employes even pulled rolling stock out of the barns for him to photograph.

Photo by S. Borden, Halifax, N. S.

"NOTHING matters now but victory," says a slogan on No. 127 of Nova Scotia Light & Power Co., a car which used to run in Baltimore, Md.

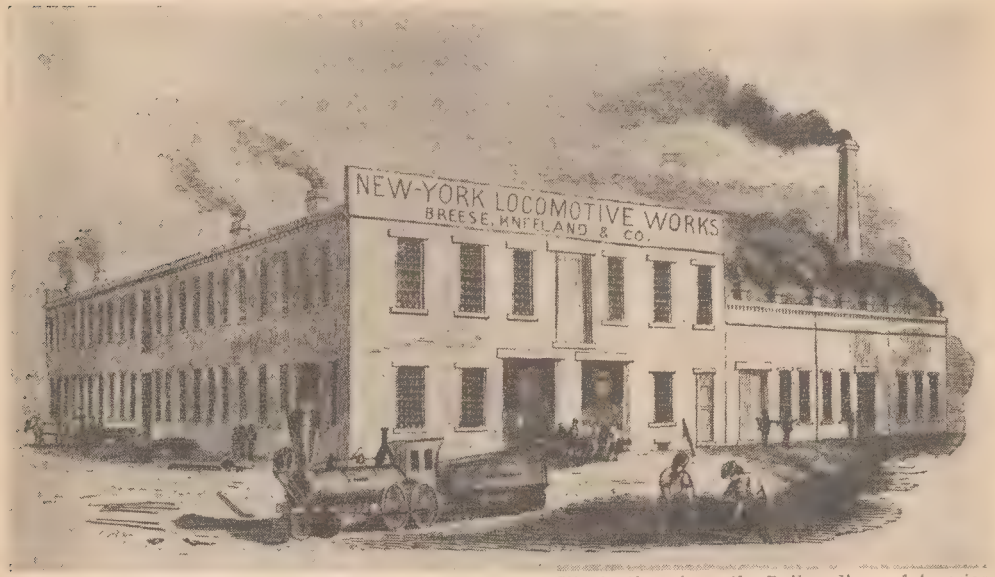
Such treatment is in sharp contrast to that met by railcamerists on many U. S. lines. Nevertheless, Joe Fountain, Canadian National representative in N.Y. City, warns:

"The war has dramatized railways as subjects for art students and artists, but it is somewhat perilous these days to be found making a sketch of rail property. A college student was observed drawing a CNR bridge over the Tantramar River in New Brunswick. Onlookers, thinking he might be a spy, reported the incident to local police. An explanation was necessary and identity had to be proved before his release."

Photo by Leroy O. King, 3114 N. Street, Washington, D. C.

A QUIET MOMENT at the 46-year-old car barn of Montreal Tramways Co.

New York Locomotive Works



Illustrations from the Railroadians of America

Founded in 1853 at Jersey City, N.J., the Plant Struggled Through One Reorganization After Another Until the Panic of 1873

STRANGE as it may seem, New York City has never produced anything like an enterprising or successful locomotive plant. Throughout an era when practically every iron works in America was having a try at engine building, and the names of such seaboard cities as Baltimore, Boston, Philadelphia and Paterson were being carried on builders' plates to every corner of the continent, Manhattan manufacturers remained indifferent to the trend.

Only a few large shipyards and marine engine building shops made half-hearted ventures into the field. The West Point Foundry, which produced the famous *De Witt Clinton, Best Friend of Charleston,* and other pioneers too numerous to mention, had an assembly plant within the city, but its manufacturing was done up-river at Cold Spring. William T. James, whose locomotives attracted attention at the Baltimore & Ohio tests of 1832, (more as the result of a boiler explosion than in admiration of their ingenious link

ENCREASE P. GOULD, Supt., New York Locomotive Works. (Right) The *Arkansas*, built about 1870 by a successor of this company, McKay Iron & Locomotive Works, for the Little Rock & Ft. Smith Railroad (now MoP)

motion), did his machine work on the island; and H. R. Dunham for a time maintained the distinction of being New York's largest engine builder.

It remained, however, for a Jersey City enterprise to assume the high sounding title of *New York Locomotive Works,* in 1853. And while the misnomer failed to stick, being changed so often in later years that even its staunchest supporters lost count, the products of this manufacturer were for the most part beautiful machines which did full honor to the great metropolis across the Hudson.

IN A DAY of outstanding engineering personalities, it was considered important to ally the name and services of some prominent locomotive designer with such a venture and the New York Locomotive Works went overboard in securing a mechanical genius as its superintendent.

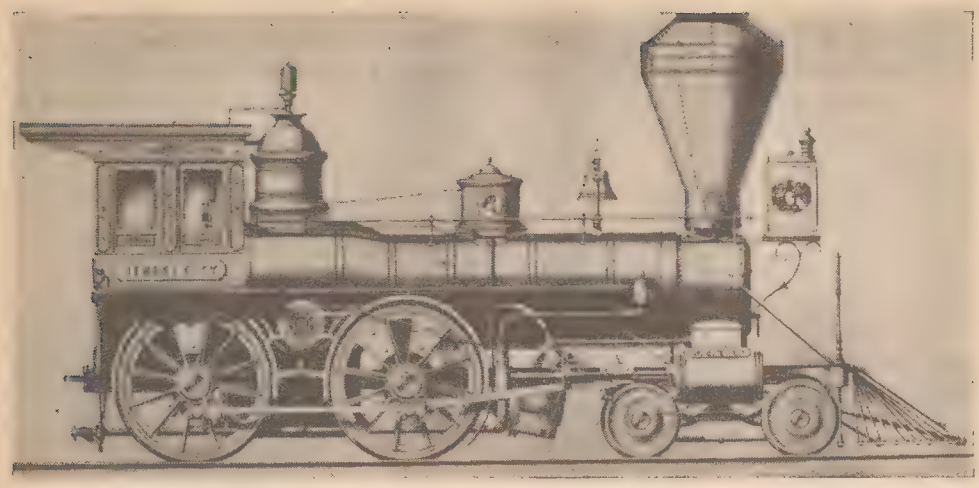
He was Encrease Personette Gould, of the Hudson River Railroad. Little has been written about this remarkable man. Born of Welsh stock, in Acquackannock Township, Essex County, New Jersey, on April 15, 1822, he had spent his boyhood in the vicinity of Paterson, where, while still in his early teens, he became apprenticed to Thomas Rogers, the famous locomotive builder of that city.

There, Gould learned engine construction the hard way. With brawn and muscle, wielding a hammer and chisel, he chipped flat surfaces that a planing machine would handle with ease today, became skillful with the heel tool upon the lathe, cut bolt threads with a hand chasing tool, and drove boiler rivets, and helped the blacksmith forge all but the heaviest of engine frames and axles. The eight-hour shift was undreamed of; ten and twelve hours a day, six days a week, being considered average working time.

Following this rigorous apprenticeship, Gould became a journeyman in the same shop, where he remained until 1847, when he switched over to engine running on the Troy & Greenbush Railroad in New York State. There his knowledge of motive power caused him to be made the system's master mechanic at the ripe old age of 28.

In October, 1851, the Hudson River Railroad was completed between New York City and East Albany (Rensselaer), absorbing the T&G. Advanced to master mechanic for both roads, Gould had the distinction of running the first train over the entire system. By 1852, he was Superintendent of the line.

With this enterprising background, it is small wonder that Gould was looked



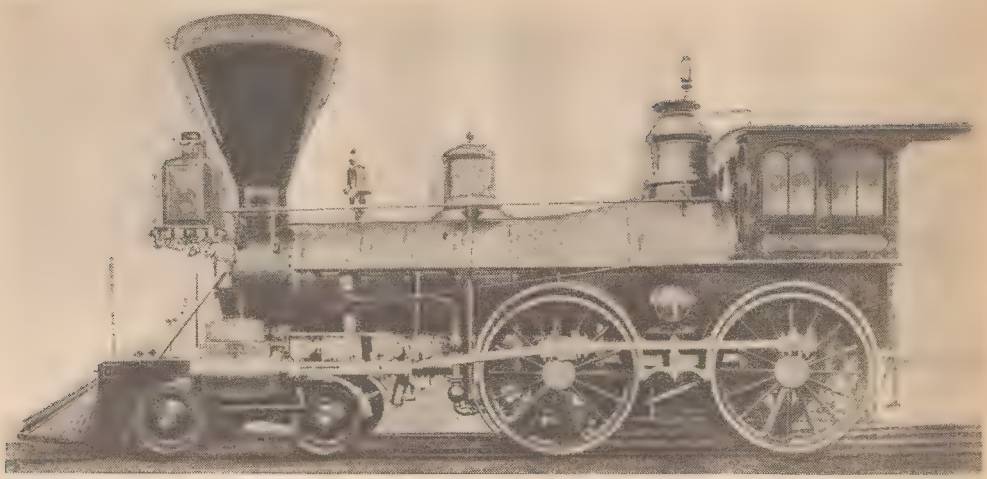
NO, that isn't Mayor Hague's portrait on the sand dome of the 1860 *Jersey City*

LOCOMOTIVE plant in Jersey City was razed many years ago. The old site is now used as a children's playground

upon by financial backers of the New York Locomotive Works as a likely candidate for the management of their shops. In the summer of 1853, he left the railroad to become the prime mover of the Company —an event that was noted in the first announcement of the company, appearing in the *American Railroad Journal* of July 2nd. It stated that the proprieters of the New York Locomotive Works, having fitted up their shops with approved modern machinery and tools, and secured the services of E. P. Gould, were prepared to fill orders for locomotive engines, tenders and railroad machinery in general, embracing the latest improvements. Further, it cited the advantageous position of the shops, located near the water and in the immediate vicinity of the New Jersey and Erie Railroads.

MUCH favorable comment resulted from the announcement. Albany's *Evening Journal* lauded Mr. Gould and tooted its horn for local transportation by declaring "the Hudson River Railroad appears to be a kind of graduating school in which the highest perfection is attained, and to which the best talent is attracted."

Logically, too, the first orders for New York Locomotive Works' engines came from Gould's old road. Familiar with the requirements of the system which was to



NUMBER 104, the ***Sir S. Morton Peto,*** of the Atlantic & Great Western (now Erie) was built by Jersey City Locomotive Works in 1865

become the vital link of Vanderbilt's combined New York Central & Hudson River Railroad, sixteen years later, he organized the shop and began production of a group of fast passenger engines which were undeniably too far advanced in design for the train service of their day.

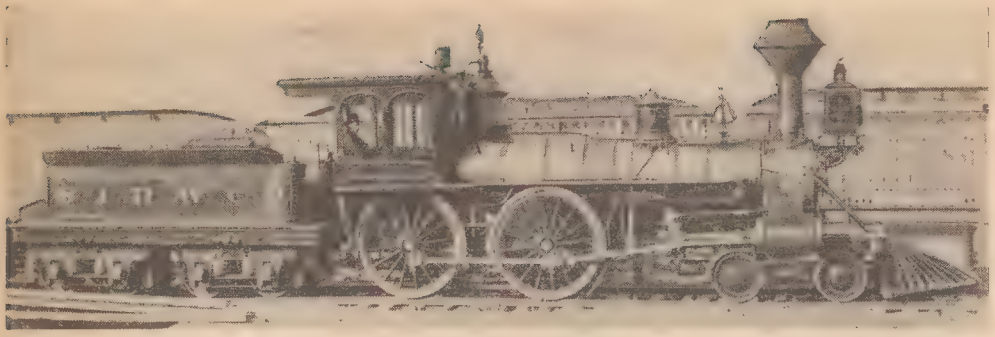
One of these excellent machines, named the *Superior,* is described in the May 9th, 1854, issue of the *American Railroad Journal.* Wrote the editor: "We have had the pleasure of examining a fine locomotive just finished by Breese, Kneeland & Co., 38 Exchange Place, New York, whose works are conveniently situated in Jersey City. This machine was constructed for the Hudson River Railroad to handle heavy express trains. It has 16-inch cylinders with 22-inch stroke. The drivers measuring 6 feet, 6 inches, are of elegant pattern, forged from wrought iron—an application of much importance in the increase of strength and reduction of weight. In other important particulars this engine presents especially favorable points. The mechanical execution of its parts is also of the best decription."

While other locomotives were being constructed for the Hudson River Railroad, the plant, curiously enough, received no orders from the lines adjacent to it. Nor are records available which indicate the nature of other enterprises. Advertisements do show, however, that the New York City office was moved to 22 Exchange Place, near Wall Street.

Under Gould's vigilant eye all went well until the great financial crash of 1857, when orders for locomotives were cancelled and it became practically impossible to collect money due on those already built and running. A deflated advertisement of November 14th read: "Locomotive Works; Breese, Kneeland & Co., Jersey City, Office, 49 William Street, New York, execute with dispatch orders for locomotives, engines and railroad machinery generally. Also, Reed's Patent Oscillating Steam Engines. Repairing done on the shortest notice."

Despite the bid for work outside its ordinary sphere, the New York Locomotive Works was soon hopelessly morassed. Mr. Gould relinquished his contract and sought employment elsewhere. Unsuccessful in the States, he took passage to Chile, where he began a career that kept him in South America for fourteen years. His introduction of Rogers' built engines to mountain gradients there, in competition with English machines, resulted in a flood of orders, and for many years the Paterson plant enjoyed a virtual monopoly in Chile.

The remainder of the partners forming

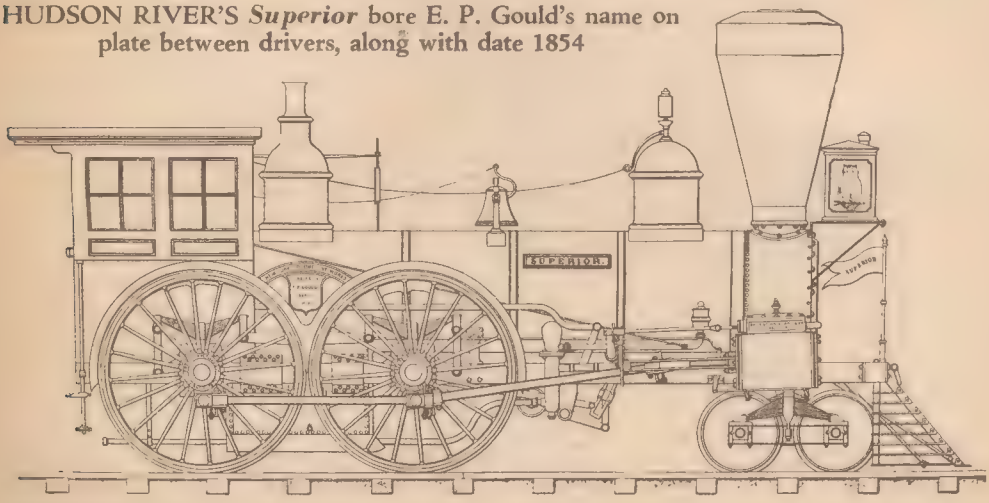


BUILT by the JCLW for New Jersey RR. & Transp'n Co. (now Pennsy), this eight-wheeler was later sold to Staten Island Rail Way Co.

Breese, Kneeland & Co., being financial men, closed up the works and waited for the panic to blow over. In February, 1858, the New Jersey State Legislature approved their application to reincorporate the plant as *The Jersey City Locomotive Works*. The new charter named William R. Travers, Chas. Kneeland, George M. Wheeler, W. G. Hamilton, and others as establishing the organization for the purpose of manufacturing locomotives, boilers, steam engines, machinery and all other articles of which iron, brass or copper formed the principal ingredients. Mr. Breese, the former president of the New York Locomotive Company, appears to have relinquished his office to become a mere member of the reorganized firm, George Wheeler assuming the executive office. Hamilton, who had served with the earlier company, was now vice-president and engineer, while an assistant of Gould's, T. S. Davis, took over the superintendency of the shop.

MINDFUL of the fickle nature of the locomotive market, the Jersey City Works contracted to manufacture steam fire engines, cast steel springs, passenger and freight cars and shafting of all kinds, in addition to engines, tenders and their parts. With only forty men, production was slow and difficult—yet the plant turned out a creditable number of locomotives of a stock design in competition with rival builders. One of these machines was pictured in the *Railway Review* as the typical design of 1860, and for the next two years business expanded considerably. Among new purchases was the

HUDSON RIVER'S *Superior* bore E. P. Gould's name on plate between drivers, along with date 1854



New Jersey Railroad & Transportation Co., forerunner of the Pennsylvania System in the Garden State.

But the troubles which had plagued the earlier organization were about to be repeated. When the Civil War began in '61, war orders somehow passed the little plant by and two years later we find advertisements under the heading: *Jersey City Locomotive Works & Tyre Welding Co.* Steam cars had been added to the list of Jersey City products and William Stuart Auchincloss to the personnel. This young engineer, just out of Rensselaer Polytechnic Institute, was destined to become one of the world's outstanding authorities on steam power. His book *The Practical Application of the Slide Valve and Link Motion to Stationary, Portable, Locomotive and Marine Engines,* is still considered a bible in the industry, being the most complete treatise on its subject ever written.

Still the orders did not come.

And then in the summer of '63, the Atlantic & Great Western stepped into the picture. This six-foot gage line was striving to construct an extension of the Erie westward from Salamanca, N. Y. to Dayton, Ohio, and on to St. Louis by the Ohio & Mississippi. Naturally great difficulty was encountered in securing money and supplies, due to the war. Gold was finally borrowed from European bankers, but the equipment problem persisted, as most shops were busy building cars and engines for the Government.

During this state of things, officials of the A & GW approached the Jersey City Locomotive Works with an offer to lease the plant for the construction of one hundred engines. It was anticipated that all of them would be placed upon the line before the close of 1864.

ATLANTIC & GREAT WESTERN 71, typical Jersey City engine, vintage of 1865, modeled for several old Currier & Ives lithographs

This optimistic dream was soon shattered. Then, as now, material was only to be had in limited quantities and not until August, 1867, were the last engines turned over to the road. Of the lot, eighty went into service on the A&GW and the remaining twenty to the Erie. The former group varied in dimensions, but were mainly of the American type. The Erie engines were all heavy freight Moguls.

Under its title of the *Jersey City Locomotive Works,* the plant had done little that was noteworthy from the standpoint of design. Rather it had staked its reputation on good engines, built slowly and methodically. The one oddity, perhaps, was No. 84, the *Telegraph,* constructed for the Atlantic & Great Western in 1865. She was equipped with piston-valves, being one of the first locomotives ever to make use of them. Evolved and patented by T. S. Davis, they proved unsatisfactory in service due to overheating. Had lubrication been as far advanced as their design, these and later piston-valves applied to Milwaukee engines by Mr. Davis would certainly have speeded the whole develop-

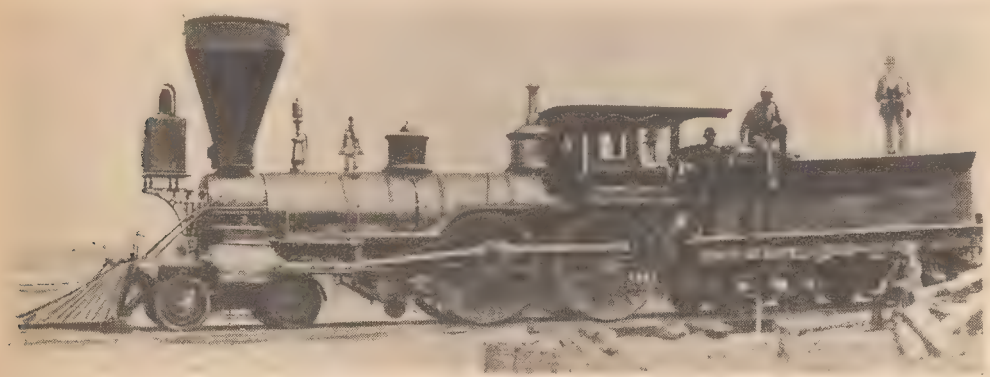
HIGHLY ORNAMENTED *Young America*, road unknown, was 30th engine outshopped by New York Locomotive Works

ment of steam power. But like Gould, he was ahead of his time and the idea languished for many years.

ON MARCH 20, 1869, there appeared in the *American Railroad Journal*, the following advertisement: "Locomotive Works for sale. The property of the Jersey City Locomotive Works, comprising 24 lots of land on the corner of Morgan, Warren and Steuben Streets, Jersey City, N. J., with brick building and machinery, capable of making eight locomotives a month; the works are two blocks from the Hudson River and connected with the New Jersey Ry., and the Erie by track; is offered for sale on advantageous terms. Apply to Charles Kneeland, 44 William Street, New York, or W. G. Hamilton, 24 Broadway."

Apparently no line of eager buyers blocked carriage-traffic on either William or Broadway, however, for on August 21st we find the *American Railway Times* carrying this notice: "Machinery Sale. The Jersey City Locomotive Works offer for sale their entire stock of machinery, tools, and engineering plant. The machinery was procured from celebrated manufacturers and has been kept in the best of order. For information, apply to the company's agent, William S. Auchincloss, Office, corner of Steuben and Warren Streets, Jersey City, N. J."

A third printed item, this one in the *Paterson Guardian* of September 14th, 1869, completes phase two of the plant's troubled career. Under the caption, *Another Locomotive Company for Paterson, Perhaps*, it read: "For some time past



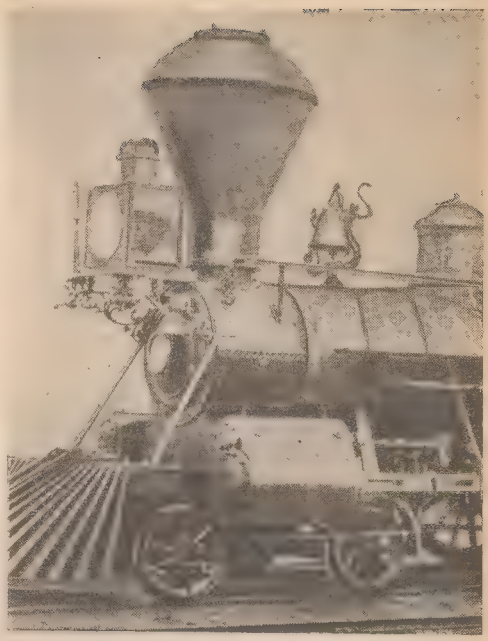
FIRST engine on the Black River & Utica (now NYC) was the *T. S. Faxton*, New York Locomotive Works, 1855

the East Boston Locomotive Company has been looking for a more favorable location for their works. The obvious advantages of Paterson have not escaped their notice and they have been negotiating with the Erie Railway for the purchase of that lines repair shops at Market Street and the railroad. A meeting was held on Saturday to consider the matter, but no conclusion was arrived at."

The reason no conclusion was arrived at was simply that the Boston outfit went to Jersey City and bought the locomotive works there in preference to the Erie shop It should be added that the New England outfit was the McKay & Aldus Co.

When this organization moved to New Jersey in March 1870, it was reincorporated under the title, "The McKay Iron & Locomotive Works." Stock was to be sold to the amount of $150,000 with eventual increase to $250,000. A few new tools were installed and a number of locomotives built. Still the railroads did not encourage the revived concern, and when the panic of 1873 reared its ugly head the venture collapsed like a burned crown-sheet, ending twenty years of service.

In later years an iron plant occupied the forlorn shop of the old New York Locomotive Works. Today, at what was once a busy corner, filled with the din of riveting and the chatter of tool steel on iron, there appears nothing but a flat piece of ground dedicated to a children's playground. The crack of the baseball bat has taken the place of the ringing sledge.



PISTON VALVES distinguished No. 84, the *Telegraph*, built for A&GW in 1864

Track-Walker

WITH head bent low and shoulders stooped,
And slow, home-keeping eye
Fixed on the rails, a silent shape,
The track-walker goes by.
A five-mile strip of grimy stones,
Edged with an iron band,
Is all his world. June snows that drift
In daisies o'er the land

He heeds not, nor red autumn flakes
That rustle down the air—
Rail, bolt, and bar to keep in place—
This is his only care.
He quits his task ten steps before
The rocking train shoots past,
Then stoops, while still the pebbles whirl,
To make a loose bolt fast.

The ruin hid in sudden flood,
Slow rust and silent frost
'Tis his to fend; and men ride by
In cushioned ease, at cost
Of his long march and lonely watch,
Nor give a backward thought
To the bent shape and plodding feet
Whose toil their safety bought.

A ceaseless traveller all his days,
New lands he ne'er may roam—
In yonder orchard is his house,
Here 'twixt the rails, his home.
Unmourned, unmissed, he dies to find
(The last lone miles all trod)
That whoso walks a railway track
Aright—has walked with God.

—**William H. Woods.**

Photo by P. Gibbs, 5400 Fieldston Rd., N. Y. City

On *the* Spot

WE HELD OFF as long as we could on the wartime reduction in the amount of paper used for *Railroad Magazine;* but at last the Federal Government has flatly ordered publishers to cut their paper quotas ten per cent as an emergency measure. So here we are, temporarily back to 144 pages plus covers.

Since newspapers and magazines all over the world have shrunk in size as a result of what happened at Munich and Pearl Harbor, we know that railroad men will understand and still give us their loyal support. The important thing is to keep going until "the lights come on again."

On the other hand, we are conscious of a real obligation to the readers. We are doing all we can to maintain and improve the quality of material we publish. By using slightly smaller type for some of our articles, stories and departments, and by picking and editing all of our copy with even greater care, we aim to present as much "meat" in the 1944 *Railroad Magazine* as we had in the 1943 issues.

As an innovation we offer a cross-reference index of 1943 facts and pictures. To find room for it we left out our customary motive-power roster this month. We may or may not publish similar indexes for any other years of the magazine—depending upon the number of votes received for the 1943 list. Regardless of that, we *will* continue to run locomotive rosters as long as we can get them.

This month our Reader's Choice coupon appears on page 145. Railroaders who fill it out will help us to select future material. The same applies to all persons who send home-made Reader's Choice coupons in letters and postcards. Returns on our November issue show "The Big Hook" drew the most reader ballots. Here is a complete summary of November titles, arranged in order of popularity.

1. The Big Hook
2. True Tales of the Rails
3. Brass Hat, *John Johns*
4. Electric Lines, *Stephen D. Maguire*
5. Light of the Lantern
6. On the Spot

INTELLIGENCE TEST. All railroad men should recognize this picture. It's an ordinary photo, nothing tricky. (If you can't figure out the answer, assess yourself ten brownies and turn to page 126)

7. Oversize Shipments
8. Locomotive of the Month
9. Roster of the NYS&W
10. Railroad Camera Club
11. Along the Iron Pike, *Joe Easley*
12. Indian Railways, *N. Viswanath*
13. Model Trading Post
14. Development of the Locomotive
15. The Callboard
16. Machinist, *Wayne Howland*

* * *

PHOTO of the month, meaning the November picture which received the most reader votes, is the D&RG scenic shot on page 23, followed by pix on pages 56, 57, 142, 120 and 82. *(Locomotive of the Month* comes under the heading of illustrated features; it is never voted for merely as a photo.)

* * *

BILL KNAPKE, a retired conductor, took issue in November *Spot* department with Max J. Moore, also a retired skipper, on one point in Max's life story, "3,000,000 Miles on the BR&P" (*Sept. '43*).

"My story," declares Max, who lives at 10 Petrolia St., Bradford, Pa., "is true in every detail, but Knapke doesn't seem to believe my statement that in the old days BR&P conductors sometimes handled the throttle for incompetent runners. Those engineers to whom I referred as poor workmen were only too pleased to have someone take over for them. I could cite actual names and incidents. Many a time while I was in freight service and long after I had been made a passenger conductor, I took over for an engineer. This statement can be verified by Fred H. Schoolmaster, who worked with me as baggage and express man for years on a local run. Fred is now retired and is living at 177 Kennedy St., Bradford, Pa."

Now we hear from another BR&P veteran, C. P. Lorch, 21 S. Stockdale St., DuBois, Pa. Lorch had 48 years of railroad work, including 8 years as telegraph operator, agent and copier, and 40 years train dispatching and chief work.

"I buy *Railroad Magazine* regularly," he

A YULE-TREE "RAID" in the old balloon-stack era

says, "and get a kick out of some stories. I read with much interest Max Moore's article on the BR&P. Since I did all my dispatching on this road and worked with Mr. Moore for 43 years, I can vouch for his story. We call him 'Carnation Max,' because he usually wears a carnation in his buttonhole. Many an order I issued for him."

Mr. Lorch also enjoys the writings of Peter Josserand, Western Pacific train dispatcher, and wants other dispatchers to submit unusual train orders for discussion. He sent us a "31" order dated (Friday) Oct. 13th, 1908, addressed to C&E No. 13 at KO, Echo, Pa., which reads: "No. 13 Eng 13 will meet No. 22 Eng 193 at Cowan," signed AJJ, Supt. Superstitious readers (if we have any) may be disappointed to learn that no trouble followed this "flimsy."

* * *

ANSWERING Bill Knapke's criticism of "Three Million Miles on the BR&P": I know a case of a head brakeman handling the hog when the engineer could not make

her pull. The engineer said he had to have a pusher; but the brakeman took her, under protest, and pulled out of the siding and up the hill. No official notice was taken of the matter, but it never ceased to be a sore spot to the hogger, who got mad whenever it was mentioned.—J. TARBELL, 1404 4th St., Jackson, Mich.

(Editor's note: Bill Knapke, 118 S. Main St., East St. Louis, Ill., tells us he enjoyed John Johns' story in the November issue, but not the title, "Brass Hat." Bill writes: "I never heard a railroad official titled other than 'brass collar,' except in the pages of Railroad Magazine. *The old warning sign, when an official was near, of drawing the fingers across front of collar, was adopted from that title." We agree with Knapke that the term "brass collar" was and is often used, especially by old-timers; but we insist that John Johns, a New York Central conductor, also is right. We trace the expression "brass hat" back to the days when the conductor, wearing a brass-plated hat, was actually a petty official, having authority to hire and fire his own brakemen. Readers are invited to get in on this argument.)*

* * *

THREE railroad stations in California are used by the Pacific Coast Railroading Ass'n in holding its meetings and displaying its exhibits, the Santa Fe depots at Highland Park and South Pasadena and the Espee's Whittier depot. This news comes from the PCRA president, John M. McFadden. Mailing address of the Association is Santa Fe station, 5715 Marmion Way, Los Angeles 42, and the membership supervisor is H. T. Gordon. Further information may be obtained from him.

* * *

A CABOOSE which has ended its railroad career and is now used as a house was noted by Lois M. Drueke, 8038 Floral, Skokie, Ill. Lois says she saw it the other day while driving through Indiana, but forgot to write down the location. Who can jog her memory?

Photo by Malcolm D. McCarter, Peru, Ind.

STUB SWITCH, a rarity these days, is still in use at Matter Park on the Marion (Ind.) Railways

HAND-CAR photo in our November issue is identified by Josiah F. Hobart, Box 308, Pacific Grove, Calif., as having been on the old narrow-gage Ilwaco Ry. & Navigation Co. near Ocean Park, Wash., about 1893, seven years before the road was taken over by the Union Pacific.

* * *

DESPITE the war, the Model Engineers Railroad Club of North Jersey will hold its fourth annual exhibit December 2nd to 11th in the club rooms, 90 Washington St., Paterson, N.J. A new six-track passenger terminal layout will be opened with gala ceremony. Trains will be running all during the show from 7 p.m. to 10 weekdays, 1 p.m. to 10 Sundays.

* * *

TUNNELS. Illinois has at least four railroad tunnels aside from the CGW bore pictured in our November issue, we learn from F. C. Evans, Wilmington, Del.; Milo S. Fields, 34 O Street S.W., Washington 4, D.C., and A.N. Ehrhard, Illinois Central agent, Wakanda, Ill. Three tunnels are close together on the IC's "Burma Road" (Bluford District) about 10 miles north of Beevesville, one being a mile long. The other is on the New York Central, Big Four, Cairo branch, near Tunnel Hill, Ill.

* * *

ODDITY. Victor W. Kreutzer, Burlington clerk, Crawford, Neb., sends us two baggage checks which bear the same numbers

but were issued by different railroads at different points—"yet," says Victor, "they arrived at our station on the same day!"

"In delivering the baggage," he continues, "a lady's suitcase from New York was sent out to a soldier by error, because of the identical numbers, 606794. This led to several days of tracing the 'lost' suitcase before we were notified it had been delivered at our station. Then we began to worry because we could not find a suitcase insured for $600. Several nights later the thought came to me that perhaps it had been delivered by mistake. I could not rest till I found out; so I returned to the depot, though the hour was midnight, and checked the month's baggage tags. Thus the coincidence of the same numbers came to light, and the mixup was rectified. I wonder if any other baggage clerk can recall a similar experience?"

* * *

ELKHORN FLOOD. Looking back to June 22nd, 1901, Benjamin White Bruce of Keystone, W. Va., writes: "It rained harder than I had ever seen it rain before, and the waters immediately rose, sweeping houses, bridges and everything else in its path, drowning eight people in Keystone."

Ben, now 84, was running a blacksmith

THE 1901 FLOOD washed away much of the town of Elkhorn

shop at the time and resided on the second floor of an old jail. For his reminiscences and the flood picture we are indebted to H. M. Smith, veteran Norfolk & Western roadmaster at Eckman, W. Va.; C. P. Carter, N&W agent, Glen Alum, W. Va., and the *N&W Magazine*.

"Some relatives lived just across the creek from me," Ben recalls. "I went over to warn them. Just as I crossed, the bridge was swept away and I was unable to get back home. The water kept rising, until it was away up on the sides of the houses. All we could do was go up on the banks and watch the flood. Several frame houses were located near the railroad. We saw them float downstream like a file of ducks. One man took refuge on top of a small shanty. Suddenly a big rush of water tore the shanty loose. The last we saw of the man he was riding downstream."

The retired blacksmith says his home was not carried off by the deluge but was so undermined that it later settled in a leaning position. A less happy fate befell the Calhoun House, containing a saloon, which was located near the present Keystone City Hall. This structure was cut in two; bottles and kegs of liquor were hurled into the creek—some of them are there today.

"Destruction of the Calhoun House saved the rest of Keystone," Ben goes on, "as the

Two Monson photos by Linwood W. Moody

LAST OF THE TWO-FOOT GAGES, the six-mile Monson Railroad in Maine, has passed into the sunset. No longer is a common carrier of this gage left in this country. Above, in the yard scene, note the tiny turntable at the lower right

beginning to show signs of decay, their railroad tracks and away from the town. But the N&W roadbed was washed out; rails were left swinging in air. Shortly after the flood subsided the work of rebuilding the tracks was started. At first the rails were blocked up with timbers. Trains were run over tracks supported in that manner until the roadbed could be filled in again. For a while all the trains, including No. 4, a crack passenger train, were run over the Keystone coal track and under the tipple to Burke Cut. No. 4 looked rather queer passing under a coal tipple."

Near the cut east of Keystone station lay a graveyard, most of which was washed out. Ben concludes: "I found the body of a woman that had been buried only a few days floating in a whirlpool near where the Eckman roundhouse now stands, and we reburied her on the spot."

* * *

TWO-FOOT GAGE. While traveling through Maine recently I was surprised and chagrinned, upon arriving at Monson, to find that the 6-mile Monson Railroad, last of the country's two-footers, had been abandoned, following the Bridgton & Harrison and the Sandy River Line into oblivion.

The Monson rails had not yet been torn up; the Vulcan's little tank job was still intact, sitting in her shed, and the cars were beginning to show signs of decay, their trucks rusty, their paint peeling. All in all, it was a sad sight for a narrow-gage fan to travel 500 miles to see. Slate had been almost the sole source of revenue for the tiny line; but for the past few months the Monson Slate Co., owner of the road, has been hauling its freight by truck. Thus the last two-foot common carrier was a victim of highway competition. Probably the rails and rolling stock will be scrapped before this letter is printed. I doubt if even the little old engine will be saved from the scrap pile.

Meanwhile, a couple of former B&H two-foot-gage locomotive, outside-frame 2-4-4 types, and four intact passenger cars are standing idle at Bridgton Jct., Maine. I understand that their owner, Ellis Atwood, was going to use all six pieces in a Massachusetts cranberry bog, but war seems to have interfered with his plans.—LEWIS BOWMAN, 59 White Plains Road, Bronxville, N. Y.

* * *

BELFAST & MOOSEHEAD LAKE RR. recently celebrated its 75th anniversary, reports Wilfred I. Hall, the company's General Auditor at Belfast, Maine.

Mr. Hall, who says he enjoys all issues of *Railroad Magazine,* was a bit perturbed because a September caption of ours inadvertently called his road the Belfast & *Morehead* Lake. He writes: "We get quite a bit

WINTER'S blanket of snow pressed upon the Monson Railroad, now abandoned, afforded scenes of rare beauty

of mail intended for the Beaufort & Morehead in North Carolina, so we have just had new stationery printed picturing a moose head."

The General Auditor says his line handles very little war traffic, but does have Sunday passenger service, which a neighbor road, the prosperous Bangor & Aroostook, does not.

"Now that the two-foot Monson is gone," he continues, "I believe the only other short lines left in Maine are two juice roads, the Aroostook Valley and the York Utilities."

There are only two Belfast & Moosehead Lake "brass collars" the other being W. L. Bowen, General Manager.

"Has any other short line a lounge car compartment in its regular coach?" Mr. Hall asks. "We have, with 8 maple upholstered chairs, magazines, etc., at no extra charge to passengers."

* * *

OVERSIZE SHIPMENTS. A reader (name not given) challenges a statement made in our November issue that the bulkiest shipment ever made by rail was probably the court house hauled from Hemingford, Neb., to Alliance, Neb.

"An account of moving a hotel by rail on the Manhattan Beach branch of the Long Island Rail Road appeared in your magazine some time ago," he writes. " Wasn't this a larger shipment than the courthouse?"

Yes, it was; but the job was done by a private contractor, not by the LIRR, although LIRR engines, engine crews and rails were used; and temporary tracks had to be laid for that purpose. Even so, the "shipment" was actually made by rail.

* * *

"TANK STOP HOLDUP." I am still getting mail commenting on my true tale in the September issue. George Ayers, son of Engr. Claude Ayers, whom I mentioned in my story, recently made a long trip to call on me and we had a fine visit. Claude passed on about 20 years ago, but his son remembers much early history of the Ft. Worth & Denver road.—WILL H. LOCKE, Pixley, Calif.

* * *

RAIL-OF-THE-MONTH is Emil F. Baumann, gateman at the Michigan Central terminal in Detroit. Emil's wife is employed at clerical work on the same road. They have five sons, all of whom have gained promotion in fighting units of the U. S. armed forces; also three daughters, one a WAAC, the other two nurses. Nobody can say the Baumanns are not doing their share.

BIGGEST THRILL in the boomer career of Robert D. Jennings of Arch Cape, Ore., occurred while he was a telegraph operator for the Big Four. One October night about 3:30 a.m. a freight train ran away downhill for 3 miles to the Wabash River, where the depot was located at the entrance to the general yard. The train had no air except on the engine and one car, a brakeman having forgotten to cut in the air at the last setout. As soon as the engineer lost control he started "whistling to beat hell," as Bob puts it, and kept whistling all the way down. The yardmaster, taking in the situation at a glance, quickly began to clear the main line, on which he was switching.

"We all watched," Bob recalls, "to see if the last car would get in clear, when the freight came plunging down hill and over the river bridge. The little switching engine stayed on the job, in a mad race. Yep, they made it by a hair. There was just time to throw the switch. The runaway shot by and gardually stopped on its own momentum going uphill on the other side of the river."

Bob retired on his sixtieth birthday. According to E. T. Mulquin, 2nd Vice President, Morse Telegraphic Club of America, Inc., "Bob owns a cottage on the grand old Pacific Ocean, within sight of the Espee tracks, and expects to spend his sunset years there reading, fishing and hunting." He learned telegraphy in 1898 when he was a callboy, and held many tricks as op and agent on the Big Four, the Nickel Plate, the Northern Pacific, the Illinois Central, the CStPM&O, the Rock Island, down in old Mexico, the D&RG on the Utah desert, the Oregon Short Line and finally the SP from 1909 to Oct. 8th, 1943. For 15 years he was SP car service agent at Portland, Ore. His last job was op at Tillamook, Ore.

"When I was working for the D&RG at Thompson, Utah," he says, "a freight train had a wrong order. Some op had recopied it, omitting '2nd' from '2nd No. 1, run 15 mins. late.' The freight was going to pass my station to the next point east of me to meet No. 1. The latter, a passenger train was on time. When I heard the freight train coming and then heard First No. 1 whistling, I knew something was bound to happen. We had the screen door held open, with a fusee stuck in the floor. I grabbed the fusee, lit it, ran out and flagged my arm off both sides. Both trains caught the signal and began slowing up. Neither crew could see the other train, although I saw both at the same time.

NORFOLK & WESTERN train of bygone days. (Left to right) Agent Graves, Brakeman Bill Howell, Condr. Cartwright, "News Butch" Stump, Mail Clerk Gregory and Baggage Man John Polo

Photo from D. O. Cartwright, retired N&W conductor, R.F.D. 3, Box 507, Roanoke, Va.

"The first one to reach the station was First No. 1. They thought the freight train was flagging them, as they saw the freight by the time they had reached the depot. The freight crew had now seen the passenger train, and were far enough away to head in on a siding. The passenger crew never knew what had happened. After they had passed, the freight pulled out and its hog-head hollered to me. 'Where did you find that fusee?' I shouted back: 'It's the only one I had. Tell your conductor to throw another off on his trip back.'

"I saw that same conductor about a year later, I was passing on through from Denver to Salt Lake on the D&RG. When the conductor—I believe his name was Osgood—took up my pass, I told him he owed me something, a fusee I had used for him the year before. He said: 'Why don't you order it from the Store Department? I don't carry extras. Besides, you don't work for the D&RG any more.' As his memory seemed dim, I let it pass, but chuckled to myself."

* * *

RIDING THE PILOT. Ed Samples' true tale last July reminded me of an incident that occurred in 1889. I was then braking on the Union Pacific between Greeley and Stout, Colo. The UP was quarrying stone at Stout, Arkins and Belleview for building roundhouses, depots and abutments. The stone was of very good quality. In fact, when I visited Cheyenne last summer I saw the old depot there, built with material hauled in many cars, I had hand-braked years ago.

One bright afternoon, when we arrived in Fort Collins with 45 cars of stone from Stout and Belleview, we received an order to take the engine, run light to Loveland, pick up stone from Arkins (which another crew had brought down from the quarry), return to Fort Collins, pick up our train and proceed with the combined train to LaSalle. Our crew consisted of Engr. Harry Cooper, Fireman Al Pemberton, Condr. Otis Shim, Brakemen Art Graves, Wood Mallory and myself. We three trainmen parked ourselves on the pilot of engine 1019 and headed for Loveland.

About halfway there, we rounded a sharp curve in a cut, into three cows. I was on the left side. In no time at all I was on the running board, first out for the cab, with Graves a close second. To this day I don't know how I covered the distance so rapidly. Anyway, by rare good luck the cows managed to head into clear and were not hit—influenced, no doubt, by the "Shoo—shoo—shoo!" bawled at them by Brakeman Mallory, who remained standing on the pilot.

So far as I know, all the boys involved in that episode except me have long since passed to their reward. The old 1019 is but a memory and even the track between Belleview and Stout has been torn up.—E. D. HUFFSMITH, 522 Cedar Ave., Long Beach, Calif.

* * *

Charles C. Squires

FIFTY-ONE years after he had started as a brakeman on the C B & Q at Galesburg, Ill., making some of his student trips with me as his partner, an old retired Burlington conductor named J. E. Williams, now living in Colorado, read my article on the Burlington last March and wrote me a heart-warming letter. This is surely getting a message from the long ago—a message I would never have received but for this magazine.

Also, I am still getting comments from my true tale, "Riding the Denver, Leadville & Gunnison," which you published some months ago, including a letter from a man of 82 living here in Oakland, a man who used to work on the DL&G but doesn't remember me. I could hardly blame him. It has been 47 years since I quit the DL&G.

Last September you published a letter about the Crystal River & San Juan, a railroad famed for its marble roadbed. This reminds me of an incident dating back to the summer of 1900. I was located at Denver as division lineman for the Denver & Rio Grande and was given a leave of absence to install a telegraph line for the Crystal River Railroad. Twenty miles of the CR was standard gage, while 12 miles of narrow-gage between Redstone and the mines at Coal Basin were then being built. The slim-gage had grades of more than four percent as well as 40-degree curves, as I soon found when I began locating the telegraph line. Ed Conihan was at the throttle of the narrow-gage construction train.—CHAS. C. SQUIRES, 4808 Melrose Ave., Oakland, Calif.

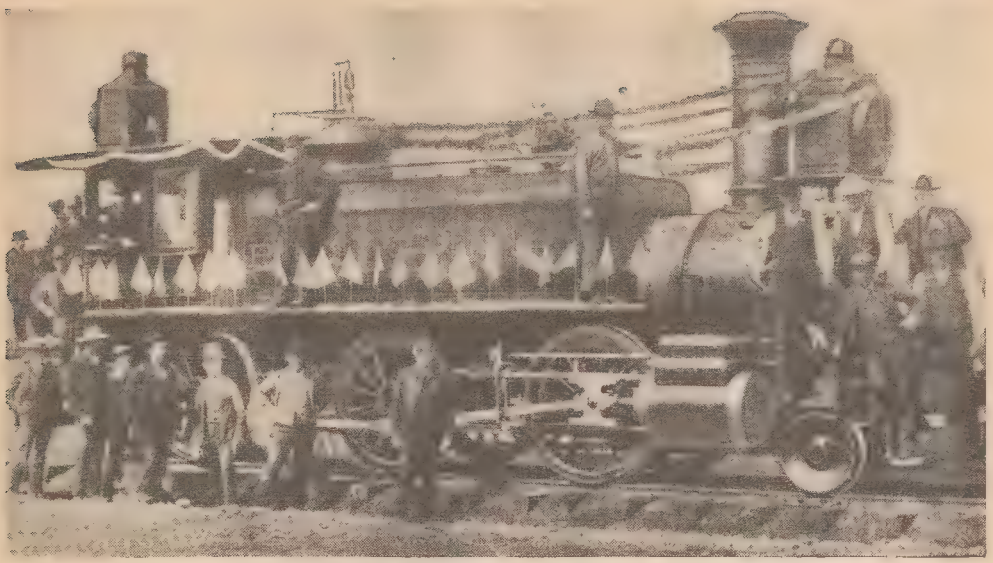


Photo in collection of Joseph Lavelle, 4615 66th St., Woodside, N. Y.

WHO can identify this tall-stacked, flag-bedecked engine?

BALLAST SCORCHERS were welcomed on the Cincinnati Southern's "Rathole Division" around the turn of the century. One day in 1902 a skinny little man, fashionably dressed, hit the master mechanic, Joseph E. Gould, for an engineer's job. The M.M. was casual. He knew boomers were like wild ducks heading south for the winter; they stopped long enough to get a stake and then moved on. He asked, "Where you from?"

"The Seaboard," said the applicant.

Gould perked up. The CS at that time had several good hoggers from the SAL. "What did they fire you for?"

The small man showed him a yellow slip.

"Fast running, eh?" The brass hat smiled. "We wheel 'em here, too—have to, or the other fellow will run over you. Well, you've got yourself a job." Glancing at the service letter again, he wrote out a permit for George Colson to learn the road. "But mind you," he cautioned, "no fast running."

Colson proved to be one of the speediest men who ever scorched CS ballast. In fact, on the night of July 16th, 1906, while he was clipping 'em off at 89 miles an hour with the 542, his hog took wings and jumped the rails. The op at Glen Mary, Tenn., reported *First No. 4* by without an engine. And this is how it happened:

In those days the *Carolina Special* from Knoxville, Tenn., was picked up at Oakdale by the northbound *No. 4* out of Chattanooga; but on this night *No. 4's* engineer, Bert Carter, had all he could handle with engine 61; so the dispatcher decided to run a *First 4* out at Oakdale. George Colson and Fireman Jim Simmons were called. Since it was common knowledge that Colson had lost four or five firemen, Jim didn't want to make the trip. However, his father, who was roundhouse foreman, insisted that he go—on what was destined to be his last run.

Colson was late, and after topping Pilot Mountain he turned the 542 loose through Sunbright. A freight engineer, Jim Moddrelle, had made Glen Mary, nine miles north of Sunbright, for meets with the "strings of varnish." He said later that he had heard Colson coming down Glen Mary, the 542 roaring like a wild thing, and he felt sure there would be trouble unless her speed was checked.

The road from Hullman to Glen Mary was pretty much of a racetrack. You had to keep a tight rein, for the track was winding, with stiff curves and a rapidly descending grade to Davidson's Creek, some 300 yards south of the Glen Mary depot. Throttle artists wheeled 'em through for a run at the Grade. The creek was damned up then, and a pumping house stood below the tracks to the west. A six-degree curve swung in a long bend to the west, leading to a steel bridge over the stream. Several accidents had taken place over this section. When the train was

"dynamited" that night, Conductor Henry Probst unsuspectingly swung off to investigate, as they stopped on the hill almost a mile north of the station. Picture Henry's amazement when he found his locomotive was gone! Trotting back toward the creek, he overtook Jim Moddrelle.

"I've lost my engine!" he cried excitedly. "She's in the creek! I was watching the headlight. It traced an arc and then went out."

The 542 had left her prints on the east rail a short distance from the bridge and had leaped forward to climb the steep girders before she turned a flip and dove into the pond where the creek was dammed, carrying the left side of the bridge with her. The crew had no time to jump. Jim Simmons was hurled underneath his engine, while Colson was catapulted over the water like a rock, onto the north bank. Modrelle found the little runner sitting there, chin cupped in his hands, dazed but unhurt.

Modrelle declared afterward that engine 542 knocked a fish out of the pond and splashed water in the door of the baggage car as it shot across the bridge. When one woman passenger learned what she had escaped, no amount of persuasion could get her back on the train.—HERBERT G. MONROE *(ex-trainman, Southern Ry.),* Smyrna, Ga.

* * *

"SHOES WERE PRICELESS." Herbert G. Monroe's letter, published under that title in October issue, tells about a wreck I well remember. I was regular fireman on engine 562 with Engineer Fowler, on the Cincinnati Southern, but had laid off to give Frank Elliott a trip to toughen up. Frank and Engr. W. A. Williams had been in a derailment at Spring City, Tenn., due to backing into a cow. Both men were injured. Two or three weeks after Frank came out of the hospital he asked me to give him a trip. So I arranged with the roundhouse foreman for Frank to take my run that night, December 3rd, 1902. Monroe's letter carries on the story from that point. The last ever seen of Frank, he was putting in a fire.

Since then I have fired for Frank's brother, Engr. Joe Elliott; also for "Drawbar" Frank Fowler, the last man who saw Frank Elliott alive, and "Hoggy" Connor, Frank's last engineer. Hoggy's life was saved, as Monroe points out, because he wore Congress gaiter shoes. Joe Elliott finally retired to a farm at Science Hill, Ky.

Four years ago I was injured in an automobile crash; now have to use crutches. Am 71 years old and in bad circumstances, living in memories of bygone days and old friends on the Cincinnati Southern. I hope some of the old-timers will write to me. My nickname, "Pistol Face," was given to me many years ago by Condr. Silas West. Most of the engineers I used to fire for have signed their last orders and crossed the Dark River. —JOHN E. EDWARDS, 1842 25th Ave., Tuscaloosa, Ala.

* * *

HOMER KEITH'S article, "If You Are a Student Fireman—" *(Oct. issue)* should be placed in the hands of every new fireman. I know, for I am a new fireman myself. The more information on firing we can get before going to work, the easier our task will be. Engineer Keith is right in advising us first to learn to fire a muzzle loader, because if an automatic stoker should break down you could still fall back on hand-firing to bring her in.

I hired out on the B&O in 1939. Here is my story: Having completed my student trips, I am sent to Toledo, O., to "mark up". My first call is 3 a.m. on a Mikado type stoker engine. It's a cold, dark, November night. Deep snow on the ground. I hang around till my hogger shows up; then we both climb into the cab.

He asks, "Who are you?"

I answer, "I'm the fireman."

"Listen, boy," he says, "I'm not going to get off this seatbox to work myself into a sweat. If it's all right with the railroad it's all right with me."

Looking around the cab, I see the stoker's steam jets and I inquire, "Where does your fireman usually carry these jets?"

"Why, you're the fireman," is all the satisfaction he will give me.

But the head brakeman, an experienced man, sets the jets for me, and I gradually work them around to the point where they fire best. We get going, with 80 cars. Half an hour later I notice that a pile or bank has formed on the left side in the firebox, so I suggest to the engineer, "Hadn't you better look in here? She seems to be piling up."

He says, "The hell with it!"

I get along somehow. The night is still dark. Suddenly the brakes are set and the

train creeps to a stop. We wait there about five minutes, doing nothing. Then the hogger says: "Well, boy, if I'd known we would be here this long I'd have brought my lunch."

The brakeman interprets this for me. "He wants you to take water, Bud."

Then I realize the engineer spotted us for the pen stock. I have told you enough to show you how helpful he was to a new man. That is how I learned to be a fireman.

Of course, I did meet some right guys, too, some engineers who really did help. Now that I know a few tricks myself, I reciprocate by oiling around, registering, turning in the time, looking for defects, making out work reports, etc.—little chores that the man at the throttle appreciates—but only for the runners who have helped me.—GORDON H. SIMMONS, Rte. 7, Box 84-A, Dayton, O.

* * *

CAMELBACKS. Adding to our published list of roads known to have used Camelback or Mother Hubbard type power, Pvt. Warren D. Stowman cites Rockaway Valley No. 5 and Marietta & North Georgia No. 25, both built by Baldwin in 1892 and both acquired by the Texas Central in 1901 and later by the "Katy." Private Stowman, whose address is A.S.N. 33,478,498, Co. C, 803rd Signal Training Regt., Fort Monmouth, N. J., reports that he now knows of 50 roads that have used Camelbacks.

Another addition to the list is the *Ferrocarriles Nacionales de Mexico* (Nat'l Rys. of Mexico), we learn from Everett DeGolyer, Jr., 8525 Garland Rd., Dallas 18, Texas. This system had at least three Mother Hubbards, according to the June 1920 blueprint book in Everett's collection. These were No. 76, 4-6-0 type, class F-37, B. L. W. 1905 (date in service); No. 570, 2-8-0 type, class G-22, B. L. W. 1906 (date in service) and No. 78, 0-8-0 type, class J, B. L. W. 1901 (date in service).

Dimensions of No. 376: Cylinders 19x27 inches, drivers 57 inches, boiler pressure 200 pounds, weight on drivers 118,000 pounds, total weight 151,000 pounds, tractive force 21,900 pounds. This engine was originally International Mexican No. 92. The low tractive force (for weight of engine) is interesting, because for years it was calculated at only 70 per cent of the pressure.

No. 570's specifications: cylinders 21x26 ins., driver 45 ins., b.p. 200 lbs., wt. on drivers 180,000 lbs., total wt. 198,000 lbs., t.f. 33,400 lbs. Formerly Int. Mex. No. 91.

No. 78's specifications: cyls. 20x26 ins., drivers 43 ins., b.p. 180 lbs., wt. on drivers 150,000 lbs., total wt. same, t.f. 28,500 lbs. Formerly IM No. 90.

"These engines have probably been renumbered," Everett comments, "and may still be in service. I will check this later when my current N. de M. data book arrives."

* * *

EVERETT DeGOLYER, JR., cites as interesting another N. de M. locomotive. The 1032, a 2-8-0 type, was built by Rogers in 1893, a construction No. 4847; ex-Illinois Central No. 638, "Casey" Jones's freight-hauler for years, scrapped July 21st, 1941, after 48½ years of service.

"There is some doubt regarding the previous owner of Dardanelle & Russelville (Ark.) No. 8, a 4-4-0 type used in the film *Jesse James*," Everett continues. "This engine bears construction No. 1861. She was built in 1888 for the Fort Worth & Denver City, No. 9, later went to the Denver, Texas & Fort Worth, becoming their No. 114. From here on the story is uncertain. Unlike most of her sister DT&FtW engines, she was not turned over to the Union Pacific, Denver & Gulf, later Colorado & Southern, in the 1893-1906 period. At this time she possibly went to the D&R, where she was still in service in 1940."

Everett is compiling an all-time roster of the C&S, the FtW&DC and the Trinity & Brazos Valley, which, when completed, he hopes to publish as a Railway & Locomotive Historical Society *Bulletin*. He would be grateful for any assistance *Railroad Magazine* readers can give him on this score.

* * *

BOSTON & MAINE engine 163 was mislabeled 165 in October *Railroad Magazine*, and the *Prides* was built by Manchester in 1872, not '62, as Eastern Railroad No. 63, declares E. E. Russell, 101 Conant St., Danvers, Mass. Mr. Russell says he has 1659 different photos of B&M locomotives and offers to loan us any we need for use in this magazine. We appreciate both the corrections and the offer.

* * *

ANSWERING a question in the October issue, "What became of the Dan Patch Line's freight motors 101, 103, built by GE in 1915?: The former became (and still is) Visalia Electric No. 401; the latter became

Photo from A. G. McCullough

DERAILMENT on the Alberni Pacific Lumber Company road in British Columbia last spring was caused by children playing on the right-of-way. They broke a switch lock, leaving the switch partly open

VE 402, then Pacific Electric 1502. In the same year, 1916, that VE bought these two they also acquired Dan Patch passenger motor car No. 15, which they renumbered 450 and later sold to the North Western Pacific. As NWP 900 the old passenger motor was again disposed of, this time becoming maintenance-of-way equipment for the San Francisco Bay bridge. These facts were given to me by Phillips C. Kauke, U.S. Coast Guard.—ALFRED ROSE, 310 Sycamore Ave., Modesto, Calif.

* * *

LARGEST ROD LOCOMOTIVE on Vancouver Island is the six-spot of Alberni Pacific Lumber Co., Ltd. (See photo.) She is a Mikado type built by Alco in 1920, with 20x28-inch cylinders and 48-inch drivers. To enable her to take corners on the sharp logging tracks her four center drivers are bald. The driving-wheel base is 14 feet 3 inches, the engine wheel base is 30 feet 6 inches, the boiler pressure is 200 pounds and tractive effort is 35,700 pounds.

This old girl was built for freight service on the Spokane, Portland & Seattle, was bought by Oregon American Lumber Co. of Bernona, Ore., and in April '39 was purchased from that outfit by her present owner. She was rebuilt at the Vancouver Machinery Depot and in her owner's sawmill machine shops at Port Alberni, British Columbia.

The six-spot is a main-line locomotive, running between the company's logging dump in the Alberni Valley and the log dump just south of this port. There is an adverse grade of 1.5 percent for the first three miles out of the camp, also a 4.2 percent grade down the last 2000 feet to the log dump at the beach. Total length of main-line track is 19.8 miles. It takes a little over three hours for No. 6 to bring a load to the beach, dump it and take the empties back to camp. Her best load was 67 cars, averaging 6000 board feet of logs apiece, plus a caboose.—A. G. MCCULLOUGH, Port Alberni, B. C., Canada.

* * *

TEXAS-MEXICAN'S two-unit locomotive is a 1200 h.p. Diesel electric built by Whitcomb Locomotive Co., Rochelle, Ind., in 1939. This answers Elliott Kahn's letter *(Oct., page 134)*. Each unit is powered by a 6-cylinder 600 h.p. De La Vergne Diesel engine. Both Whitcomb and De La Vergne are Baldwin subsidiary companies. As delivered to the T-M Ry. this unit was two individual MU locomotives. She hauled President Roosevelt on his Mexican trip last July, being the only Diesel road engine employed in the entire journey.—C. A. BROWN, Publicity Officer, Central Electric Railfans' Assn., 1240 Edison Bldg., Chicago.

LEND-LEASE ENGINES. November *Railroad Magazine* refers to the American 2-8-0 locomotives sent abroad in this war—two pictures and a letter from an Englishman who saw one of those engines on a Great Western train near Birmingham.

If and when Yankees get to France in this war—as they probably will—they are likely to see relics of the first World War in the form of 2-8-0 locomotives, both of the USA and the ROD, in service on French rails. At one time the Nord Ry. had some of these engines converted into tankers. I was there in 1918 and found the American motive power a never-ending source of interest. The present type are built to a smaller loading gage.

Just what this war has done to the European railway systems is much of a mystery. Little data has leaked out. The Nazis must have scrambled the ownership of the locos to such an extent that they will never be sorted out again—German, French, Italian, Greek, Polish and Central European engines all over the place. I wonder how much information the OWI will release on the subject of locomotives used abroad?—Edward C. Taylor, 17 Ashland St., Taunton, Mass.

* * *

PRESIDENT ROOSEVELT'S special train, on his latest visit to Canada, consisted of Canadian Pacific engines 2337 and 5183, both freshly painted and in perfect trim, and these nine cars: coach, baggage car, dynamo car, ten-section lounge car, two Pullmans, one diner, one eight-compartment car and the President's private car, the latter weighing 285,000 pounds (14½ tons).

The train was turned over to the CPR at Toronto by the Toronto, Hamilton & Buffalo, which picked it up again for the return trip. It was equipped with a two-way radio so the President could keep in touch with Washington at all times. Mr. Roosevelt expressed pleasure at the excellent service rendered for him and his staff by the TH&B, the CPR and the Royal Canadian Mounted Police.

Great care was taken in selecting the train and engine crews, consideration being given to the personal background and past record of each man. The CPR crews included Engineers E. Griffith and T. E. Ward, Firemen E. Dumaresq and P. W. Walder, Conductors C. Inglis and Robt. H. Carson, and Trainmen F. D. Garbutt, J. B. Moise and A. Davidson. Maintenance-of-way men went over the entire track, checking every inch of rail and roadbed. All switches were spiked and all switching movements were halted 45 minutes before the Presidential train came through.—John Karl Lee, 220 Howland Ave., Toronto, Canada.

* * *

OLDEST DEPOT. "Doc" Woodward, staff member, Veterans Administration faculty, who now lives at 2300 W. 10th St., Los Angeles, has been writing to us for years from various points in U.S. and Hawaii, recalling nostalgically the days when he was a Great Northern trainman. Now he sends us a calendar picturing what Ripley claims is the world's oldest building used as a railroad station. This is a church built by the Spanish at Cuaulta, Mexico, more than 380 years ago.

* * *

PHOTO on page 113 (courtesy of *Canadian National Magazine*) shows what bitterly cold weather often does to a locomotive—ice-coating the drivers, brakeshoes and underframe. This sort of thing appeals to the artistic eye, but mechanical men say it's a pain in the neck.

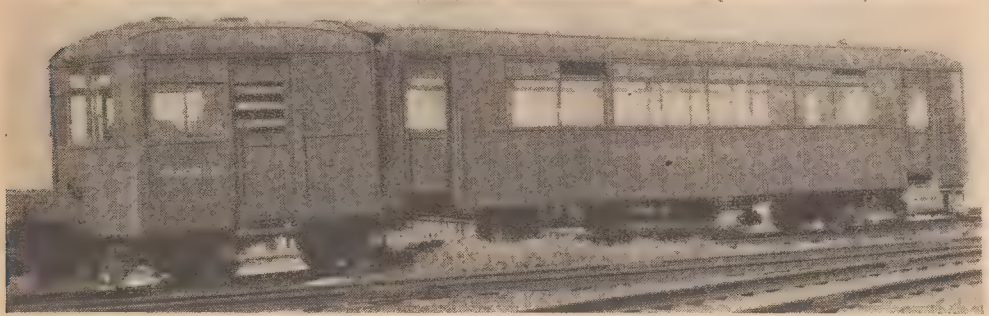


Photo by Robert R. Brown, 700 St. Catherine St. W., Montreal, Canada

ARTICULATED steam coach "B" of Newfoundland Railway was scrapped in 1935

Photo from J. C. Whitten, Lincoln, Neb.

ROTARY PLOW found it tough going through Cumbres Pass, on Rio Grande narrow-gage route between Alamosa and Durango, Col., early in 1940

RAILROAD MAGAZINE

Index for 1943

BY WAY of celebrating the first anniversary of *Railroad Magazine* in the Popular Publications group, we offer a detailed, cross-reference index of fact material used in all our 1943 issues. Each item is followed by the month and page. Asterisks (*) denote pictures.

The list is printed mainly to serve readers who save their old copies of *Railroad* and want to check back on elusive bits of information. We also have borne in mind the needs of railroad men, students, teachers, historians, journalists and various other researchers.

Although *Railroad Magazine* was founded in 1906—by telegraph operator Frank A. Munsey—we have never before undertaken such an index; but if, as a result of our publishing this one, there should spring up a real demand for similar coverage of past years, we will doubtless compile and print additional lists from time to time. In that event we would welcome suggestions for making the presentation even more helpful.

ABANDONMENTS: Mar. 119; April 127; Oct. 34; Dec. 125, 157
ACREAGE, TOTAL OF U.S. RAILROADS: Sept. 73
ADJUSTED TONNAGE: April 96

ADVERTISING, RAILROAD: *Wartime Rail Advertising* May 8; May 136*, 154*, Aug. 140*, 141*; *Buccaneering Days* Nov. 76; ad on tender Nov. 144.* (See also AAR ad in each issue)
AFRICA: Sept. 149; Nov. 59*, 149
AIR-CONDITIONING: Feb. 59
AIR GAGE: Oct. 30*, 71
ALABAMA & CHATTANOOGA (AGS): early cab Nov. 14
AIRPLANE-TRAIN ACCIDENT: Dec. 6
ALGOMA CENTRAL: reminiscences Dec. 131
ALLEN, HORATIO: Dec. 59, 75
AMADOR CENTRAL: turntable April 129*
AMERICAN LOCOMOTIVE CO.: May 58*
AMERICAN RAILWAY UNION: April 6
ANN ARBOR: *Great Lakes Railroading* Mar. 110
ARMORED CARS: Mar. 26*
ARMY RAILROADERS: Feb. 24; July 130*; Sept. 141*; Oct. 125*; Nov. 58: Dec. 81*
ARTICULATED LOCOMOTIVES: Jan. 79; Nov. 60
ARTILLERY, RAILROAD: Feb. 30*
ATLANTA & ST. ANDREWS BAY: May 84*
ATLANTA, BIRMINGHAM & COAST: July 102, 110*; Nov. 143
ATLANTIC & GREAT WESTERN (Erie): July 20
ATLANTIC & PACIFIC (Santa Fe): Franconia wreck, July 152 and Dec. 129
ATLANTIC COAST LINE: Jan. 115; Feb. 96; Mar. 18; April 100; Aug. 91*, 146, 147*; Dec. 123
AUSTRALIA: Feb. 141
AUTOMATIC STOKER: Oct. 30*, 109; Nov. 59, 143
AUTOMATIC TRAIN CONTROL: July 64; *Manual* Sept. 160; Oct. 73

BALDWIN LOCOMOTIVE WORKS: Mar. 8, 78; April 35; May 48*, 59; June 52; Oct. 13; Nov. 60
BALTIMORE & OHIO: big hill Jan. 79; Jan. 132*; Relay, Md., viaduct Feb. 27*; SW Line Feb. 128*; Mar. 17, 99, *National Ltd.* Mar. 133*; tunnel Mar. 120*; floods Mar. 103*; April 42; *President* engines April 99; May 18, 55*; June 15*, 60*, 115*; July 40*, 44, 56; Alton 66, *T-3* 70; Aug. 151; Sept. 101; BR&P Sept. 8; *Saved by Rats* Oct. 8; Oct. 13, 15, 33, 94*, 136*, electrification Oct. 23, wrecking trains; Nov. 12*, 14*, 15*, 18*, 20*; 60, 67, 92*
BANGOR & AROOSTOOK: Mar. 105; April 20
BARRE & CHELSEA: April 41
BEDWELL, HARRY: Aug. 135; Nov. 145
BELFAST & MOOSEHEAD LAKE: Sept. 64*
BELLS, LOCOMOTIVE: Mar. 58, 136; April 97*; May 147; U.S. and British Aug. 55; empty bell frame Dec. 63; silver dollars Dec. 100
BERMUDA: Nov. 148
BIG FOUR: May 136; July 64; Dec. 140*
BINGHAM & GARFIELD: Nov. 60; roster Dec. 91
BLACK RIVER LINE: Dec. 98
BLACKWELL, ENID & SOUTHWESTERN: Sept. 77*
BOILERS; LOCOMOTIVE: Mar. 92; April 90; explosion Dec. 59; short Dec. 63
BOOKS: *The Harvey Girls* Jan. 86; *Pennsy Class P Engines Jan. 86; Railroads of Oklahoma* April 156; *Railroading from the Head End, Time Books* June 160; *RR Songs of Yesterday* Aug. 76; *Freight Train Handling Supreme, Road and Rail* Aug. 77; *Louisville & Nashville RR* Aug. 78; *Locomotive Engineers' and Firemen's Manual* Sept. 160; *Western N. Y. and Penna. Railway* Sept 161; *Clear the Tracks!* Dec. 98; *Fulton County Narrow Gauge* Dec. 101
BOOMER TROLLEYS: July 137: Sept. 129; Nov. 110, 111*
BOOMERS: Mar. 130; June 140: *Debunking the Boomer* Aug. 106; *Lightning Slinger* Nov. 66; C. A. Roach Dec. 88
BOSTON & ALBANY: sleeping cars Jan. 81; wreck Mar. 121; April 18; Aug. 53*. 137: Oct. 12, 21; Dec. 62
BOSTON & MAINE: crossing woman Jan. 128; bucket signal Feb. 58*, train Feb. 131*; Billerica Shop Mar. 14*, *Mountaineer* Mar. 22*, freight train Mar. 132*; April 15, bridge April 70, 129; May 12, Hoosac Tunnel May 90; June 61*; Aug. 152; Sept. 72, ball signal Sept. 147; Oct. 77*, 78, 82*, 89*, 90*; Dec. 78, station renamed Dec. 57*, divers Dec. 80*
BOSTON & PROVIDENCE: Jan. 23; Mar. 53*; origin of cab Oct. 12, wheel springing Oct. 73; Dec. 62
BOSTON, HARTFORD & ERIE: July 69
BOXCARS: converted into coaches Dec. 75*
BRAKES: LIRR, Jan. 42; May 129, 133, 134; Pennsy *T-1* June 65; runaways Sept. 13; 16; *Manual* Sept. 160; Dec. 77
BRIDGES: Pennsy Jan. 46*, reverse curve Jan. 145*; Relay, Md., viaduct Feb. 27*; CNR Feb. 141*, Aug. 148*, Sept. 72*, highest CNR June 50*; Hell Gate Mar. 58; L&N April 70*, Aug. 78*, 79*; B&M April 70*, drawbridge Dec. 80; covered April 129, July 149; NKP May 111*; Pecos May 152*; drop bottom Aug. 131; BR&P Sept. 13*, 26*; Erie Sept. 16*; CP Aug. 149*, Sept. 149*; Southern Sept. 138*. Nov. 140*; Patterson Oct. 8; Chickamauga Oct. 19; Youngstown Oct. 94*; over interurbans Oct. 118, 137*; India Nov. 128*, 129*, 131*; Dec. 69, 78*, 132*
BRITISH: Mar. 133, 135; April 12, 30; May 154; June 58, 154; July 55; Aug. 91*; oldest loco Sept. 75*; Sept. 101*, 149, 151; Oct. 131*; Nov. 148; Dec. 59, 61, 81*, 134
BROTHERHOODS: April 6, emblems 121; May 42, 154*; July 146; Sept. 42*; Dec. 54
BUFFALO, ROCHESTER & PITTSBURGH: *3,000,000 Miles on the BR&P* April 8; Dec. 127
BURLINGTON: track Jan. 73*; Jan. 74*, 77; USRA Mikados Feb. 60; Mar. 13, 18, 125; April 26, 42, 129; May 33, 35*, 37*; June 15, 54*, 56*; Aug. 151*; true tale Sept. 90; Sept. 152*; Oct. 71*, 72*, 134*, 139; Nov. 89*; narrow-gage Dec. 42*; Dec. 57*
BUTTE, ANACONDA & PACIFIC: Aug. 54

CAB, LOCOMOTIVE: Mar. 15*; heroic engine crew July 140*; article Oct. 10, Oct. 105*; tools in cab Nov. 140; *Janus* Dec. 61; Dec. 121
CABOOSE: M&StL, NKP, Jan. 137; LV Jan. 139; NYC Feb. 132; Alton May 55*, Santa Fe May 112*; wrecks July 141*; MN&S Aug. 84, 85; P&F Aug. 130; BR&P Sept. 25; Oct. 71; Nov. 86; Dec. 19, 125, 134*
CAIRO, TRUMAN & SOUTHERN: Nov. 62
CALIF. WESTERN RR & NAV. CO.: April 129
CAMDEN & AMBOY: Aug. 71*; Oct. 11*
CAMDEN, GLOUCESTER & MT. EPHRAIM: June 135
CAMELBACKS: Jan. 34*; Mar. 99, 129; May 139; July 147; Oct. 14, 15, 19; Dec. 139*
CANADIAN ELECTRIC LINES: Sept. 118; Oct. 120; *Canadian Trolley Oddities* Nov. 101; abandonments Nov. 157, Dec. 157
CANADIAN NATIONAL: straight track Jan. 81; Victoria bridge Feb. 141*; *Inter-City Limited* Mar. 13*; Mar. 105, 134*, 134; April 97*, 136; May 17, 49, 110*, 111*, 143; highest bridge June 50*; June 66*, 146*, 151*, true tale June 81; July 154; Aug. 148*, record reefer shipment Aug. 149, conversion of Pullmans Aug. 149, raildog Aug. 151; Sept. 66*, 72*, 149, 151*; Oct. 102*, 130*, 149*; Dec. 134*, 135*
CANADIAN PACIFIC: Jan. 143*; Mar. 19, 136*; April 40*, 71*; advertisements May 17; horsecars June 17; July 60*, 61*, 62, true tale 91; Aug. 55*, 149*, 150*; Sept. 66*, 132*, 149*; Oct. 108*, 141*, rails 147; 148*; Nov. 63*, 99*, *Lucy Dalton* Nov. 146-149*; Dec. 62*, 64, 79
CAR, LARGEST: Mar. 46*
CAR-WASHING MACHINE: April 130*
CARS, ABANDONED: Jan. 46*, 127*; Feb. 49*; Mar. 26*; April 71*; May 112*; June 50*; July 108*; Sept. 43*
CATENARY: model Jan. 99; Feb. 127*
CATSKILL MOUNTAIN: Mar. 105
CENTRAL OF GEORGIA: Mar. 26*; May 21*; July 102, 107*, 109*; Nov. 145*
CENTRAL PACIFIC: June 65; Dec. 120*
CENTRAL VERMONT: Mar. 105; Aug. 150*; Oct. 80*, 145; Nov. 149
CENTRALIZED TRAFFIC CONTROL: July 79*; Aug. 142
CHATTANOOGA SOUTHERN: Oct. 29
CHEHALIS WESTERN: April 129
CHESAPEAKE BEACH: Mar. 66*
CHESAPEAKE & OHIO: May 45*, 57*; *Lower 9 Has Gone to War* May 30; June 58* horsecars June 19; July 56, 144; Oct. 140
CHICAGO, ATTICA & SOUTHERN: Mar. 119
CHICAGO & EASTERN ILLINOIS: July 64
CHICAGO GREAT WESTERN: track repairs Aug. 86; Oct. 63*; *Buccaneering Days* Nov. 76
CHICAGO & NORTH WESTERN: Feb. 24*, 137, 138; Mar. 12, 13, 21*, 123*; April 44*, 127, 130; May 21*, 49; June 13*; July 62; Aug. 139*, 152; Sept. 72; Oct. 4*, 13, 23, 27, 71*; Nov. 13*, 68, 112*
CHINA: April 27; July 148
CINCINNATI & WESTWOOD: April 15*
CINCINNATI, HAMILTON & DAYTON: Feb. 118*; true tale May 74*; Aug. 136
CINCINNATI SOUTHERN: Feb. 106; Oct. 145
CIRCUS: June 14; Sept. 10, 20
CISCO & NORTHEASTERN: April 127
CLAIM AGENTS: Jan. 149; Mar. 126; July 141*
CLEARANCES: ovtrsize shipments Nov. 88
CLINCHFIELD: Aug. 57
COAL: Feb. 60; April 98*; July 85*, 119*; article Sept. 64, old wagons Sept. 149; Oct. 17; Nov. 62, 86; Dec. 25*; *Maryland Division Tallowpots* Dec. 108, *Fireboy* Dec. 113, coal-truck loading bridge Dec. 132*
COINCIDENCES: Jan. 11, 135; Feb. 139; Mar. 120, 122; June 133, 154; July 154; Aug. 90*; Nov. 146
COLORADO & SOUTHERN: Dec. 42*
COLORADO MIDLAND: Jan. 6; Feb. 132; Mar. 82; April 32*, 33; Aug. 75, 136, 141
COLUMBUS & GREENVILLE: Jan. 137; April 21
COLUMBUS & INDIANAPOLIS CENTRAL: Oct. 13
COMMUTERS: Jan. 12, 42; April 71*
CONCORD: Mar. 105*
CONDUCTORS: article Aug. 124; BR&P Sept. 8, Cotton Belt Sept. 140; handling engine Sept. 16; Nov. 86; as midwife Dec. 6, as singer Dec. 56, conductor's valve Dec. 77
CONNECTICUT RIVER: Oct. 77*, 81*
COTTON BELT (St. Louis Southern): *L-1* Sept. 70*; Sept. 140*; Oct. 136
COUPLERS: Mar. 27*; U.S. and British Aug. 55; Miller Sept. 28; Dec. 22
CROSSING: busiest manually operated Oct. 94
CRYSTAL RIVER & SAN JUAN: Sept. 143
CUMBERLAND & MANCHESTER: Sept. 145*; Dec. 140*
CUMBERLAND VALLEY: first sleeping-cars Jan. 80; train Sept. 156*
CURVES: Feb. 50

DAN PATCH LINE (MN&S): article Aug. 80, roster Aug. 88; Sept. 146*; Oct. 145
DARDANELLE & RUSSELLVILLE: Mar. 96*
DEBS, EUGENE V.: April 6
DELAWARE & HUDSON: engineer's predicament Jan. 142; paycar Aug. 6; loco specifications Aug. 57; Aug. 138*; freight locos Sept. 74, 76*; Oct. 28*; Nov. 22*, *K-62* Nov. 64*; *Stourbridge Lion* Dec. 59, Gravity RR Dec. 74; Dec. 80, 132*, 139*
DELAWARE & NORTHERN: Apr. 127; *Rails Rust in the Catskills* Sept. 102; Oct. 140*; Dec. 125
DELTA VALLEY & SOUTHERN: Mar. 105
DENVER, LEADVILLE & GUNNISON: April 72
DENVER & RIO GRANDE WESTERN: Jan. 80; 133; narrow-gage roster* Jan. 104 and Feb. 82; Feb. 58, 63*, 130; Mar. 87*, 151*; April 79, 97, 103, 133*; May 90*; true tale June 91; heroic engine crew July 140*, Supt. Ridgway July 149; Nov. 23*; Dec. 6, 63*

DENVER, SOUTH PARK & PACIFIC: July 151; Nov. 135; Dec. 42
DES MOINES & MINNESOTA NARROW GAGE: Sept. 72
DIESELS: cost, Jan. 79; Feb. 60*; Mar. 18, 102; *How the Diesel Works* May 78; May 110*; *Steam or Diesel-Electric* June 52; CRI&P July 66; switcher Oct. 24; freight Oct. 134; Dec. 77*, 126*
DINING-CARS: May 9, 17, 23, 27; Aug. 151*
DISPATCHER: Feb. 75; Mar. 121; May 132, 138; July 65, 72; true tale, Aug. 106; Aug. 127; Bedwell Aug. 135; *The New Dispatcher* Sept. 130; Oct: 87, 104
DIVERS: Dec. 80*
DOGS: Jan. 46*; Feb. 8, 48*; Mar. 63*; May 135; June 144; July 143; Aug. 151; Sept. 6, 144*; Nov. 143*; *Canine Cinder Dicks* Dec. 68*; Dec. 6, 122
DOUBLE-DECKERS: LIRR, Jan. 36*; Jan. 37*, 38 June 62*; trolleys article June 102
DOUBLE-ENDERS: Oct. 20; article Dec. 58
DRIFTING, LOCOMOTIVE: article Aug. 48
DULUTH, MISSABE & IRON RANGE: April 99
DUTCH STATE RAILWAYS: April 24

EARP, James W.: Aug. 136
EAST TENNESSEE & WESTERN NORTH CAROLINA: April 129; May 110*, 143; July 143; Aug. 52; Oct. 145
EAST WASHINGTON: Mar. 66*
EASTMAN, JOSEPH B.: Mar. 20*
EASTERN RR OF MASSACHUSETTS: Oct. 82*
ELECTRIC LINES: LIRR Jan. 13, 41; catenary Jan. 99; Martha's Vineyard Aug. 17, BA&P Aug. 54; Dan Patch Aug. 80 (See also CANADIAN ELECTRIC LINES)
ELECTRIC LINES DEP'T.: Jan. 145; Feb. 142; Mar. 140; April 138; May 117; June 102; July 134; Aug. 113; Sept. 118; Oct. 112; Nov. 101; Dec. 146
ELECTRIC RAIL TERMS: Jan. 152; Feb. 149; Mar. 147; April 148
ELECTRIFICATION: IC June 65; B&O Oct. 23; Pennsy Dec. 110
ELEVATED, NEW YORK: April 96*, 149*; Aug. 56*; Oct. 20; Dec. 59
ENEMIES OF RAILROAD: LIRR, Jan. 23; Jan. 25
ENGINE TRUCKS: Feb. 55*
ENGINEERS: Mar. 15*; *Right-Hand Side* May 128; July 125*; heroic D&RGW July 140*; July 144, 147; rules, examiners July 151; true tales Aug. 93, 100, Sept. 83; advice to conductors Aug. 124; boomer Aug. 140; Sept. 72; *Manual* Sept. 160; Oct. 33*, 34*, 35*, 102, 133, 138; Nov. 142, 143*; Santa Dec. 6; Joe Bromley Dec. 98; loved his engine Dec. 107; *Maryland Division Tallowpots* Dec. 108
ERIE: sleeping-car Jan. 81; Mar. 10*; April 24*; 154* model coach April 82; May 37, 85*; June 56*; first compound loco June 64; July 10*, 19, 82*, 85*, 142; Aug. 142*, 145; Sept. 43*, 147; Oct. 14*, 69*, 95, 97, 132*; Nov. 57*; oversize shipments Nov. 90*, 94*; locos sold to NYS&W Nov. 122; Dec. 121*
ERIE & KALAMAZOO: April 125*
EUROPEAN & NORTH AMERICAN: Oct. 78, 81
EXCURSIONS: LIRR, Jan. 26*; Jan. 29; BR&P Sept. 26
EXPRESS MESSENGERS: Jan. 138; REA May 42; horse express cars June 8; July 111*; Aug. 140

FAIRLIE, ROBERT F.: Dec. 61, 63
FAMILIES, RAILROAD: Jan. 11; June 6, 118*; July 56, 149; Aug. 137, 144; Sept. 142, 144; Oct. 127, 139, 140; Nov. 137
FAST MAIL: April 96
FATHER-SON CREWS: Feb. 133, 134; Mar. 136; April 125; June 136; July 86; Sept. 143; MKT (not Rock Is.) Oct. 139; Nov. 137
"FEATHERBEDDING": July 146
FERRIES: LIRR Jan. 17*; Jan. 21, 24; Mar. 110; May 111, 135; Aug. 10; Nov. 147; Dec. 103, 104
FIREBOX: Apr. 93; May 134; July 56, 61; heroic crew July 140*; "wrinkle bellies" Aug. 101; Sept. 68; Wotten Oct. 14, 17*, 19; eyestrain Oct. 26; *Student Fireman* Oct. 102; wide Dec. 139*
FIRELESS ENGINE: June 51*
FIRES: C&NW, Jan. 47*; Hinckley May 6; oil July 24*; July 38, 144; Aug. 16; Sept. 10; Nov. 104*; Dec. 124*
FIRING: Feb. 79; May 128; July 124*, 140*; true tale Aug. 100, coal Sept. 68; Sept. 83; Sept. 142, 148; *Manual*, Sept. 160; Oct. 76, 81; *Student Fireman* Oct. 102; Nov. 59; qualifications Nov. 140; Dec. 98, 121; *Maryland Div. Tallowpots* Dec. 108; *Fireboy* Dec. 113
FITCHBURG: Oct. 70*
FLANGES: Feb. 50; Mar. 45
FLOODS: Jan. 78*, 112; Feb. 119; Mar. 103*, 122; May 141; Aug. 144; Oct. 131*, Nov. 132*, Dec. 27* (See also HURRICANES)
FLORIDA EAST COAST: Mar. 102*; April 136; Oct. 131*
FONDA, JOHNSTOWN & GLOVERSVILLE: Dec. 127
FORNEY, MATTHIAS N.: April 96*; Oct. 20*; Dec. 59
FORT WORTH & DENVER CITY: Sept. 90
FRANCE: April 11*; July 60; Oct. 15; Nov. 132*
FREIGHT: LIRR, Jan. 44; cars, Feb. 58; nonrevenue, Feb. 58; refrigeration, Feb. 59; loss of, May 141; order notify, May 146; Talbotton run July 118; oil July 8; fast lines July 65; order bill of lading July 148; train handling Aug. 77; MN&S run Aug. 86; waybills Aug. 137; weighing trains Sept. 18; average length of trains Sept. 72; slack Sept. 74; illogical rate structure Nov. 78; *Oversize Shipments* Nov. 88; routes Nov. 139
FRICTION: See LUBRICATION
FRISCO: old coach Jan. 46*; order board Jan. 119; freight engine Feb. 59*; April 127; May 20; June 64; July 45; Sept. 140
FUEL: Feb. 60; April 98*, 100, 125*; May 16, 18; June 58; July 85*, 119*, 140*; *Coal* Sept. 64; shortage of, Oct. 19; wood-burners Oct. 76, 81; how much coal burned in '60s Nov. 62

FULTON COUNTY NARROW-GAGE: Dec. 101

GEORGIA & FLORIDA: Mar. 124*
GERMANY: April 11, 24; May 78
GHOST TRAIN: Dec. 103, 104
GOULD, JAY: July 23*, 31
GOVERNMENT CONTROL: Aug. 77
GRADE CROSSINGS: LIRR, Jan. 19; Jan. 37; man-wife crossing watchers June 117
GRAND CENTRAL TERMINAL (N. Y.): April 99
GRAND RAPIDS & INDIANA (PRR): Dec. 135*
GRAND TRUNK: Feb. 133*; Mar. 118; pay car, Aug. 6; wreck, Aug. 58*; Nov. 56*
GRAND TRUNK WESTERN: Mar. 105
GRANITE RAILWAY: April 15
GRAVES, RAILROADERS': April 71*; July 141*; Sept. 142; Nov. 132*; Dec. 56*
GRAVITY RR: Dec. 74
GRAY, BRIG. GEN. CARL R, JR.: Feb. 24
GREAT NORTHERN: old days, Jan. 139; April 129; avalanche, June 137; steam turbine electric loco, July 65; Aug. 92*; true tale, Aug. 93; Ephrata station, Dec. 122, 123*
GULF, MOBILE & OHIO: Jan. 83*; June 60*; pay car, Aug. 6; livestock loss, Oct. 130*; Dec. 56*

HANDCAR: April 133; Sept. 116*; Nov. 141*
HARBOR FACILITIES: Jan. 43, 44
HARVEY HOUSE: Jan. 86; Feb. 161
HAWAII: June 148*; Sept. 148
HEADLIGHTS, LOCOMOTIVE: U.S. and British, Aug. 55; Oct. 70*
HONDURAS: Oct. 141
HORSE-DRAWN CARS: Feb. 48*; April 134*; June 135; Aug. 12, 71*; Nov. 133*
HORSE EXPRESS CARS: June 148*; model July 126, 128*; Aug. 139*; Sept. 148
HOUSATONIC: Dec. 104
HUDSON-TYPE LOCOMOTIVES: Jan. 80
HUMBOLDT NORTHERN: April 129
HUNGERFORD, S. J.: Jan. 142
HUNTINGTON & BROADTOP: April 21
HURRICANES: LIRR, Jan. 33 (See also FLOODS)

ILLINOIS CENTRAL: Feb. 152* (see note page 137, May '43); Mar. 18, 97; April 13*, 29*, 130; cutoff, May 139; June 60*; electrification June 65; students July 74, 143; pay-car Aug. 6; "gallows" turntable Aug. 154*; Natchez & Hamburg loco Oct. 12*; Oct. 21; Nov. 57*, Nov. 114*, 132*; Dec. 93
ILLINOIS TERMINAL: Feb. 148*; May 119*, 123*
INDIA: July 84*; *Railways Girded for War* Nov. 128
INDUSTRIAL TROLLEY CARS: Jan. 47*
INJECTORS: July 147; Oct. 81
INSPECTION ENGINES: April 126*; Oct. 17, 18*, 22; Dec. 135*
INTERURBANS: Jan. 125*; Feb. 49*; Mar. 12, 20*, 23*; April 138; May 111*; July 67; Sept. 118; under railroads, Oct. 118, 137*; Dec. 151, 153
ITALY: May 110*; Oct. 71; Nov. 146*, 147*

JAPAN: old print, Oct. 144*
JAVA: Feb. 42*; April 70*; Sept. 151
JEFFERS, WILLIAM: Feb. 66
JERSEY CENTRAL: May 85*, 91*; May 145*, 146; July 22*, 36, 66*; Aug. 137; Oct. 21
JOHNSON BAR (reverse lever): April 37; Aug. 49; Dec. 23
JUICEFANS ROMANCES: Jan. 126, 127*; Feb. 116; July 137

KANSAS CITY SOUTHERN: Mar. 18; Nov. 144*
KUHLER, OTTO: Oct. 27*

LACKAWANNA: April 98*; May 34, 39*; June 53*; *Phoebe Snow* June 137; June 147; Aug. 75*, Sept. 72; *Clear the Tracks!* Dec. 98
LAKE SHORE & MICHIGAN SOUTHERN: July 19, 27; Aug. 53*
LAKE TAHOE RAILWAY & TRANSPORTATION CO: Dec. 57
"LANTERN" DEP'T. ARTICLES: *Streamlining the Track* Jan. 73; *Locomotives and Curves* Feb. 51; *Boiler Construction* March 92; *Locomotive Boilers* April 90; *How the Diesel Works* May 78; *Steam or Diesel-Electric* June 52; *Locomotive Superheaters* July 58; *Art of Drifting* Aug. 48; *Coal* Sept. 64; *Law of the Lever* Oct. 65; *Running Gear Failures* Nov. 52; *Friction* Dec. 70
LAP ORDERS: Jan. 134
LAWNDALE NARROW GAGE: April 66*
LEHIGH VALLEY: May 38; July 23; *Bee* July 81* and Sept. 143; origin of cab Oct. 11, 21; automatic train control Oct. 73; Nov. 18*; Dec. 62
LEVERS: Oct. 65
LIMA LOCOMOTIVE WORKS: May 56*, 60
LINGO OF ELECTRIC LINES: Oct. 112
LIVE OAK, PERRY & GULF: Mar. 152*
LIVESTOCK: Aug. 150; Oct. 81, 130*
LOCOMOTIVE BUILDING PROGRAM: Sept. 76
LOCOMOTIVE, DEVELOPMENT OF: July 95*; Aug. 129*; Sept. 101*; Nov. 152*
LOCOMOTIVE, ELECTRIC: LIRR Jan. 41, 42*; Baldwin and Westinghouse Jan. 81; SIRT Feb. 59; Milw. Feb. 61*; Pennsy Mar. 13, Oct. 24; LE&N Mar. 144*; B&O May 89; New Haven June 144; steam-turbine July 65 and Aug. 56; Swiss trolley Sept. 75*, 123*; hourly tonnage rating Dec. 81
LOCOMOTIVE ENGINEERS' & FIREMENS' MANUAL: Sept. 160
LOCOMOTIVE, HUDSON-TYPE: Jan. 80; May 91
LOCOMOTIVE NUMBERING: odd Jan. 136; CNR Mar. 101; Sept. 148
LOCOMOTIVE OF THE MONTH: *Challenger* Jan. 84*; *M-1 Berkshire* Feb. 64*; Pennsy *T-1* Mar. 106*; Rio Grande *L-105* April 102*; Canadian Nat'l *U-2-g* May 92*; RF&P *Governor* June 68*; B&O *T-3* July 70*; Pennsy *J-1* Aug. 122*; Cotton Belt *L-1* Sept. 70*; NYC *L-4* Oct. 74*; D&H *K-62* Nov. 64*; MoP *2200 Class* Dec. 82*

LOCOMOTIVE POOLING: April 97; July 66
LOCOMOTIVE TESTING: Dec. 140
LOCOMOTIVES, COMPOUND: June 64; Aug. 102
LOCOMOTIVES, PRIMITIVE: LIRR Jan. 22; Western Mass. Feb. 117*; B&O electric May 89; June 10*, 63; July 56, 64*, 95*; Aug. 129*; Sept. 101*; Oct. 10; Nov. 152*; Dec. 59, 120*
LOEWY, RAYMOND: June 62*
LONG ISLAND: *Largest Commuter Road* Jan. 12, engine 13 Jan. 130*, G-5 Jan. 135*, Hempstead depot Jan. 135; goat Feb. 145*; Mar. 127; April 136*; May 140; July 36*; Oct. 16*, 20, 21, 137; Dec. 56*
LONG TRAINS: July 150; Aug. 146; Sept. 139
LONGEST RAILROAD: Aug. 91*
LOUISIANA & ARKANSAS: Dec. 119
LOUISVILLE & NASHVILLE: Feb. 60*; Mar. 18, 26*, 121; April 70*; oldtime adv. May 30*; horse-cars June 19; automatic train control July 64; history Aug. 78; Oct. 131*; Nov. 94*, 96*, 115; Dec. 6, 97*
LOWVILLE & BEAVER RIVER: Jan. 136
LUBRICATION: Feb. 50; June 59; July 61; Aug. 48; *Friction* Dec. 70

MAIL: April 18*, 96; train backed up 15 miles July 149; Aug. 90 mailbox robbery; Aug. 102; old print Sept. 21*; Sept. 110*, 129; Canadian trolleys Nov. 101; hanging mailbag Dec. 118*
MAINE CENTRAL: Jan. 11; Mar. 131; Oct. 82*, true tale Oct. 76
MANITOU & PIKE'S PEAK: Feb. 135*
MAPS: LIRR Jan. 18; SP May 51, NYO&W May 104; Talbotton July 107; C&EI boxcar route July 140; Dan Patch Line Aug. 81, Nantucket & Martha's Vineyard Aug. 10; D&N Sept. 104; Western North Carolina Dec. 10 and 14, C&S Dec. 43, B&G Dec. 91, NY&NE Dec. 104, NY to Boston (trolley) Dec. 146
MARION RAILWAYS: Jan. 145; July 137*
MARTHA'S VINEYARD: *Salt Spray on Rails* Aug. 8; Aug. 137*; Oct. 135
MASON, WILLIAM: Oct. 20, 21*, 70*
McCLOUD RIVER (Now SP): Dec. 66
McKEEN MOTOR CAR: Aug. 58
MEXICO: Aug. 47; double-enders Dec. 58*, 64*, 65*
MICHIGAN CENTRAL: July 128*; Aug. 53*; Dec. 137
MIDLAND TERMINAL: See COLORADO MIDLAND
MILITARY RAILWAY SERVICE: See ARMY RAILROADERS
MILLHOLLAND FAMILY: July 56; Oct. 19
MILWAUKEE ELECTRIC: April 138*
MILWAUKEE ROAD: Jan. 119; Feb. 61*, 134; Mar. 12, 13, 25*; April 22*, 25*, 31, 129; June 6; July 65; Oct. 24, 26, 27*, 29*, 66*; Nov. 83; *Memories of the Old St. Paul* Dec. 44; Dec. 78, 126*
MINNEAPOLIS & ST. LOUIS: Jan. 137
MINNEAPOLIS, NORTHFIELD & SOUTHERN: Aug. 81; Sept. 146* (See DAN PATCH LINE)
MINNESOTA VALLEY: Oct. 12
MINNESOTA WESTERN: Aug. 81
MISSOURI-KANSAS-TEXAS: May 143; Aug. 57; Sept. 43*; Oct. 133, 137; freak wreck Dec. 133*
MISSOURI PACIFIC: Mar. 18; new engines April 99, handcar April 133; true tale June 85; tank cars July 12, 42*, 44; July 79*; Oct. 103*; Dec. 82
MISSOURI SOUTHERN: Oct. 73
MODEL: catenary construction Jan. 98; electric car Feb. 102; old-time street car details Mar. 138; Erie coach April 82; trucks May 148; horse-express car July 126; NYC steamer Sept. 79, Christiani Sept. 151; Oct. 126*, 127*
MONTPELIER & WELLS RIVER: April 129
MORGAN, J. P.: Jan. 28
MOTHER HUBBARD: See CAMELBACKS
MOVIES, RAILROAD: July 150; Aug. 73*
MUNCIE & WESTERN: Feb. 140

NAMING OF ENGINES: Oct. 34*, 35*; Nov. 61
NANTUCKET: *Salt Spray on Rails* Aug. 8; Oct. 135
NARROW GAGE: Jan. 133, 134, 81*; Feb. 10, 58, 63*, 130; Mar. 100*; April 16*, 29*, 66*, 72, 129; May 110*, 143, 144*; true tale June 91; June 135; July 130*, 140*, 143; Aug. 8, 52*, 137*; Sept. 42*, 72, 151, 153*; Oct. 78, 135; Nov. 133; *Double-Enders* Dec. 58; Dec. 42, 101, 135*
NASHVILLE, CHATTANOOGA & ST. LOUIS: Mar. 98, 101*; the *General* Oct. 19
NEVADA COUNTY NARROW GAGE: April 29*, 33*; May 144*
NEW JERSEY MIDLAND: Oct. 97; Nov. 122
NEW LONDON NORTHERN: Mar. 60*
NEW YORK & NEW ENGLAND: Jan. 11; Sept. 74*; *Four-Train Wreck* Dec. 102
NEW YORK CENTRAL: Jan. 28, 80; Feb. 132; Mar. 15, 105; April 17*, 31, 44*, 125; *Fast Mail* 96, GCT 99; *Fifteen Minutes to '43* May 23, *Boy on Hilltop* May 24*, longest train May 138; June 15; automatic train control July 64; Aug. 53*, 90*; Sept. 68*, model Sept. 79, horse car Sept. 148*; Oct. 26*, 28*, 30*, 35, 74*, 95; predecessor roads Nov. 61, Nov. 88*, 95*; Dec. 74*, *36 Years of Engine Pictures* Dec. 136
NEW YORK, NEW HAVEN & HARTFORD: Jan. 81, 136*; Mar. 60; Mar. 102; April 18, 71*, 128*, 129; May 12, *The Kid in Upper 4*, May 27*, May 57*, 78*, 85*, 88*; *Century* May 89; June 50*, 144*; Oct. 134; Dec. 69, 102
NEW YORK, ONTARIO & WESTERN: May 91*, 135*; all-time roster May 104, June 120, July 96; July 68*; Sept. 67*, 103; Oct. 140*; Dec. 142*
NEW YORK, SUSQUEHANNA & WESTERN: Sept. 147*; roster Oct. 97 and Nov. 122; Dec. 123
NICKEL PLATE: Jan. 137; Feb. 136; April 18*, 21; May 111*, 146; Silver Creek wreck Sept. 39

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NORFOLK & WESTERN: Mar. 16*, 104*; April 8*, 71*; May 57; July 63, 75*; student ops July 72; Aug. 90*, Sept. 42*; Oct. 136*; Nov. 60*
NORFOLK SOUTHERN: Jan. 129*
NORTHERN PACIFIC: April 27, 41*; May 6, 16*, 18*; true tale Oct. 92; Oct. 13, 136, 138*, 145; Nov. 93*, 96*
NORTH SHORE LINE: Mar. 12, 20*
NORTHWESTERN PACIFIC: April 100*, 148*
NORWICH & WORCESTER: Mar. 61*; map Dec. 104

OFFICIAL GUIDE: Dec. 129
OIL: cartoon May 19; *900,000 Barrels a Day* July 8; valve-oil Aug. 49; Nov. 13*; Dec. 70*
OILER: Feb. 52*
OKLAHOMA, RAILROADS OF: book review April 156
OLD COLONY: Jan. 8, 21, 23; June 50*; Aug. 10, 17; Oct. 15
ONTARIO TROLLEYS: article Sept. 118
OPEN TROLLEYS: Aug. 113, Sept. 124*; Oct. 118*, 123*
OPERATING REVENUES: Feb. 61
OPERATORS: NYC May 22*; *Seasoning the Ham* July 72; *Debunking the Boomer* Aug. 106, Bedwell Aug. 135, CTC Aug. 142; Sept. 113*; true tales Oct. 76 and 92, ambidextrous Oct. 134, Oct. 140; *Lightning Slinger* Nov. 66; Nov. 112, 113, 145; *Memories of the Old St. Paul* Dec. 44
ORDER BOARD: Jan. 119
ORDER NOTIFY: May 146
OREGON & CALIFORNIA: May 63
OREGON, PACIFIC & EASTERN: April 129
OREGON SHORT LINE: April 30
OVERSIZE SHIPMENTS: Nov. 88*; Dec. 121*

PACIFIC COAST: Mar. 119; April 127; May 143
PACIFIC ELECTRIC: Feb. 145; May 120*, 124*, 126*; Sept. 86*, 129; Dec. 130*
PACIFIC GREAT EASTERN: May 147
PANAMA: Dec. 121
PANTOGRAPH OPERATION: Sept. 72; Oct. 24
PARRY, WILLIAM J.: Dec. 134
PASSENGER CAR INTERIORS: Sept. 27*, 92*; Oct. 147*; Nov. 80*
PAYCAR: Aug. 6; Oct. 141; Dec. 121
"PEGLEG" RR: Sept. 40
PENNSYLVANIA, RAILROADS OF: map, April 157
PENNSYLVANIA RR: owns LIRR, Jan. 28, 40, 44; trestle Jan. 46, Class P engines Jan. 86, Horseshoe Curve Jan. 56*; *S-1*, Feb. 52; Mar. 13, 17, 62*, 102, 107, 126, 127*; April 34*, 43*, 45*, *D-16 Locomotives* 124, 132*, 137*; May 42, Enola yards, May 89; *S-1* May 89, flood May 141; June 9*, 11*, *T-1* June 65; July 8*, 41*, 65*, 141*, oil war July 20; Aug. 122*, 126*, 135*, 136*, 141*; Sept. 73 142, book reviews 161; Oct. 28*, 29*, 64*, 95*, 124*; Nov. 60*, 99*; Dec. 6, 70*, *S-1* 76*, 80, 124*, 136*, 137*, 139*, 140*, 141*, *Maryland Division Tallowpots* 108
PENNSYLVANIA-READING SEASHORE LINES: Feb. 139*; Mar. 120; April 99*
PERE MARQUETTE: old days, Jan. 107; Mar. 110; May 111, 135; PH&N train Sept. 154*
PHILA. & ERIE: (See OIL)
PHILA. & COLUMBIA: April 16
"PIE BOOKS": Mar. 130
PILOT: true tale June 85; U.S. and British Aug. 55; E&NA Oct. 81
PIONEER & FAYETTE: Aug. 130
PISTON: travel Oct. 70; percent of cutoff, Dec. 79
PITTSBURGH, CHARTIERS & YOUGHIOGHENY: roster Sept. 137
PITTSBURGH & LAKE ERIE: Feb. 61; Oct. 95
PITTSBURGH, LISBON & WESTERN: Mar. 119; April 21
PITTSBURGH, McKEESPORT & YOUGHIOGHENY: Jan. 82
PLANT SYSTEM: Mar. 6 (See note, July 144)
POPPET VALVES: Jan. 80
PORT JERVIS & MONTICELLO: June 64
PORTLAND & ROCHESTER: July 69
PORTLAND, SACO & PORTSMOUTH: Oct. 82*
PUBLICITY: LIRR, Jan. 26; speed Mar. 10; *Wartime Rail Advertising* May 8; *Buccaneering Days* Nov. 76; Dec. 75*
PULLMAN: Jan. 80, 81; Feb. 37*; March 102; strike Apr. 6; Apr. 84*, 89; *After You, Soldier!*, May 28*; May 30, 50*; July 66*; glass-roofed observation car Aug. 47; advertising Aug. 140, 142*; conversion 149: BR&P Sept. 28; Sept. 143; Nov. 80, 82

RAILFANS: H. Reid, Jan. 130
RAILS: Jan. 23, 40*, 73; April 136; May 91; July 68; Sept. 86*; *Rails Rust in the Catskills* Sept. 103; effects of heat and cold Oct. 147; *Rails Across the Blue Ridge* Dec. 8 (See also, TRACK)
RARITAN RIVER: Dec. 129
READING: Jan. 126*, 140; Feb. 44, 150*; Mar. 17, 118*; April 37*, 38*, 126*; oil war July 23; July 34, 56; Aug. 112*, 136*; Oct. 16*, 17*, 19, 20*, 21, 22*, 27*, 70 early cabs, Oct. 13 and 14; Nov. 97*, 136*
REFRIGERATION: record shipment Aug. 149
RERAILING RECORD: Sept. 22
RETAINERS: Dec. 23*
RETARDERS: Aug. 57
RICHMOND, FREDERICKSBURG & POTOMAC: May 89; June 68*; July 65*
ROBBERIES: Feb. 136; paycar Aug. 6, $17 train robbery, Aug. 102; true tale Sept. 90
ROCK ISLAND: Jan. 138; Feb. 79; Mar. 19; April 6; May 42, 139*; June 18*, 56*; July 66; took wrong road, Aug. 140; Oct. 20*; Nov. 56*
ROSTERS, MOTIVE POWER: Rio Grande narrowgage Jan. 104 and Feb. 82; Index Feb. 61; T&NO Mar. 108; Milwaukee Electric Ry. April 141; NYO&W May 104, June 120 and July 96; MN&S Aug. 88; PC&Y Sept. 137; NYS&W Oct. 97 and Nov. 122; Bingham & Garfield Dec. 90
ROUTE, LONG: Dec. 131

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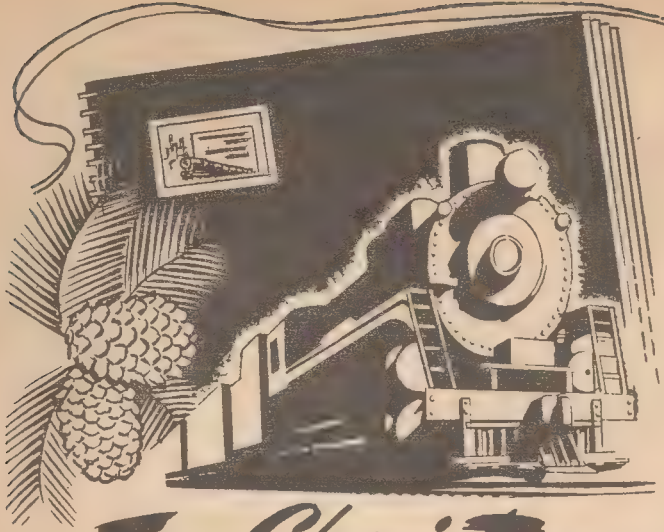
"RUBBERNECK" TROLLEYS: July 137*; Sept. 129; Dec. 153
RULEBOOK: Jan. 101; examiner, July 151; Aug. 59; Oct. 6; Nov. 6; Dec. 94
RUNNING-GEAR FAILURES: article Nov. 52
RUSSIA: June 135*; Aug. 84*
RUTLAND: Feb. 137*; Mar. 97*; April 31*; July 141*

SAND: Sept. 72; Oct. 13
SANTA FE: track Jan. 75, *Harvey Girls* Jan. 86; old days Jan. 121; 113; train Feb. 48*; model Feb. 104*; engineer Mar. 15*; Mar. 86; April 36*, 99; May 86*, 112*; June 51*, 141*, horsecars June 19; July 33*, 34*, true tale July 86, Sept. 94; Franconia wreck July 151; Sept. 77*, 78*; Oct. 24, 25*, 27, 29*, 31*; Nov. 60*, 62*, 68, 92*, 98*, 139, 138; Santa Claus Dec. 6, long route Dec. 131
SCHMID, ROBERT: *36 Years of Engine Pictures* Dec. 136
SCHOHARIE VALLEY: Feb. 134
SCOTT, THOMAS A.: July 22, 28*
SEABOARD: Jan. 115; Mar. 6; Mar. 18; April 69*, 135*; June 18*, 136; Sept. 144; Dec. 123
SEMAPHORES: Jan. 118; July 66*; Aug. 137; Oct. 134
SHAY, EPHRAIM: June 67*
SHOPS, SHOPMEN: May 6, June 66*, 139; Sept. 43*, 111*, 147; Oct. 132*: boilermakers' strike Nov. 53; advice Nov. 116
SIERRA: Sept. 148
SIGNALS: gantry Jan. 142; bucket Feb. 58*; hand June 130; first electric July 66* and Aug. 137; block Aug. 138*; ball Sept. 147; three-indication Dec. 23*
SILVERTON NORTHERN: Jan. 133
SINCLAIR, ANGUS: *Development of the Locomotive Engine* Oct. 11, Dec. 66
SLEEPING CARS: Jan. 80; Feb. 49*; April 84*, 89*; May 27*, 31*; July 66, Sept. 28; Nov. 83*, 85; Dec. 103
SMOKESTACKS: Jan. 79; Mar. 105*; April 98*; May 138; Oct. 81
SNOW: LIRR, Jan. 31*; 32, C&G, 137; GN disaster June 137; SP snowsheds Aug. 148; BR&P flanger Sept. 24, BR&P Sept. 39*; Oct. 83; Nov. 101*, 102*, 103*, 106*
SONGS, RAILROAD: Aug. 76
SOO LINE: April 130, 135*; true tale June 70; Aug. 89*; Oct. 139
SOUTH AMERICA: April 35, 42; May 110*
SOUTH CAROLINA RR. & CANAL CO.: Aug. 129*; Nov. 152*; Dec. 59
SOUTH SHORE LINE: Mar. 23*; July 138*
SOUTHERN: old days Feb. 75; Feb. 107; Mar. 64*; April 91*; May 8*, 45; June 10*, 142*; automatic train control July 64; July 68*; Aug. 152*; Sept. 138*; Oct. 35*, 111*; Nov. 13, 117*, 132*, 140*, 143*; Dec. 76; *Rails Across the Blue Ridge* Dec. 8
SOUTHERN NEW JERSEY: Aug. 156*
SOUTHERN PACIFIC: Jan. 81, fills. Jan. 75; narrow-gage engine 81*, *Sabine,* 47*; women Feb. 98*, 15 locos in one train Feb. 48*, Mogul Mar. 81, pie books Mar. 130; April 10*, 27, 29*, 39, 127, 129; May 6, 14*, 51, 59, 83, 142*, 152*, 153*; June 134*, 138*; July 34*, 145, 150*, *No. 1776* July 150; Aug. 58, 77*, 90*; Sept. 6, 144*, 84*, 87*, 96, 139, 144, 153*, true tale 83; Oct. 19*, 21, 23*, 73*; Nov. 120*, 133*, 143, "mud hens" 144, 145; Dec. 66, 78*, 125*; birth on train Dec. 6
SPEED: "Mile-a-minute Murphy" Jan. 33; Annual Survey Mar. 10 (see comments June 131); SAL Sept. 144; *Galloping Goose* Dec. 79; 123
SPEED RECORDER: July 147; Dec. 77
SPEEDOMETER: Dec. 77
ST. JOHNSBURY & LAKE CHAMPLAIN: April 129
STAMPS: Jan. 46*
STANDARD TIME: Dec. 131
STATEN ISLAND RAPID TRANSIT: Feb. 59
STATION AGENTS: MeC Jan. 11; CM&StP Jan. 118; NYC May 22*; Aug. 127; true tale Oct. 76, Dec. 44; Nov. 112; oldest Dec. 6; Dec. 57*
STATIONS: Jan. 11, 15*, 22*, 27*; April 71*, 125*; May 138; June 50*; July 110*, 150; Aug. 85*, 132*, 135; Sept. 15*, 33*, 147*, 154*; Oct. 63*; Nov. 78*, 87*, 112*, 113; Dec. 53; renamed Dec. 57*; old and new Dec. 122, 123*; NYS&W Dec. 123; fire Dec. 124
STAYBOLTS: April 94
STEAM LOCOMOTIVE BUILDING PROGRAM: Sept. 76
STONINGTON & PROVIDENCE: Mar. 60
STREETCARS, SUMMER: Aug. 113; Sept. 124*; Oct. 72*, 118, 123*
SUNDAYS: travel, LIRR Jan. 24;
SUPERHEATER: July 58; Aug. 49; Dec. 71
SUSQUEHANNA & NEW YORK: April 127
SWITCHING PROBLEMS: Jan. 87
SWITCHMEN, SWITCHES, SWITCH KEYS: Feb. 96*; Mar. 44*; April 100; true tale May 62; June 126, 134; Aug. 144, 152; Sept. 6, 10, 17*, 96, 144*; Nov. 137, 143; safety switches, Dec. 25*; advice to switchmen Dec. 92; poem Dec. 117
SWITZERLAND: Mar. 122; Aug. 75*

TALBOTTON: *Georgia Short Line* July 102
TANK CARS: See OIL
TAXES: Jan. 18; June 59
TELLTALE: Dec. 23*
TEMISKAMING & NORTHERN ONTARIO: roster Mar. 108
TEMPLE, HARRY C.: Feb. 129
TENDERS: May 65; July 114*; Sept. 64*, 73; Oct. 71*; Nov. 143, 144*; Dec. 97*
TERMINAL RR ASS'N OF ST. LOUIS: June 64
TEXAS & PACIFIC: May 136*; Oct. 133; true tale Dec. 113
THUNDER LAKE LUMBER CO: April 30*
TICKETS: "automaticket" machine Aug. 135*; ticket scalpers Nov. 79, sale Nov. 112; long overdue Dec. 6
TIMETABLES: LIRR Jan. 16*; WNC Dec 12*, *Official Guide* 129
TIONESTA VALLEY: April 127
TIRE, LOCOMOTIVE: Feb. 51; Oct. 72
TOLEDO & WESTERN: Aug. 130; Dec. 132*
TOLEDO, WABASH & WESTERN: Oct. 14
TONOPAH & TIDEWATER: June 51*; Oct. 143



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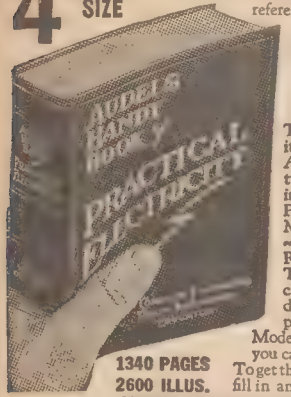

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TORONTO, GREY & BRUCE: Dec. 62*, 64
TOWERS: LIRR Jan. 29; Milw. Mar, 25*, SR Mar. 64*; June 137; Sept. 23*; Oct. 141*
TRACK: Jan. 73; CNR Jan. 81; curves Feb. 50; shims May 91; India July 84; classification Aug. 57, repairs Aug. 86; BR&P Sept. 13*, 26*, 39*; 86*, D&N 117*, marble ballast 143; Oct. 119*; Nov. 62
TRACKAGE, JOINT: Oct. 133; Dec. 103
TRACKMEN: Jan. 112; Mar. 27*, 69; April 129, 133; May 110; June 141; July 86, 116*; Aug. 57*, 77*; Oct. 79; Nov. 141*; Dec. 57*, poem 89*, 125
TRACKSIDE GRAVES: Feb. 139
TRAILING TRUCKS: Dec. 135
TRAIN ORDERS: lap order Jan. 134; run wild Feb. 141, Oct. 87, Nov. 6; Mar. 121; April 143; check your May 134; June 138, 154; problem Aug. 59, Oct. 6; read your orders Aug. 128, old Aug. 142; *He Forgot the Order* Oct. 92; Dec. 47
TRAINMEN: "Featherbedding" July 146
TRAINS, LONG: July 150; Aug. 146; average length of freight Sept. 72
TRANS-FLORIDA CENTRAL: July 6; Sept. 140
TREVITHICK, Richard: Mar. 93*; Aug. 129*
TROLLEY LINES IN NORTH AMERICA: list April 143 and May 116
TUNNELS: Hudson Jan. 35; Kingwood Mar. 120*; Hoosac tunnel July 26; BR&P Sept. 24*, Swiss 75, Steinway, SR 138; B&O Oct. 8, SP 73*, Texas 143*; Illinois only tunnel Nov. 81*, NYC 88*; WNC Dec. 14*, Swannanoa 10, 14; Licklog 23*
TURNTABLES: April 8, 126*, 129*, 132*, 136; May 139; June 146*; July 108*, 142*, 145; Aug. 56*, 146, 147*, 154*; Sept. 77*; Oct. 132*

UNCLE DICK (locomotive): Nov. 138
UNION PACIFIC: *Challenger* Jan. 84*, Feb. 68, Mar. 97, Sept. 76; order boards Jan. 123; 4-12-2 type Feb. 50; Jeffers Feb. 67, flood 119; Mar. 19, May 44*, 47*; June 97*; operators July 72; McKeen Aug. 58, centralized traffic control 142, camelback; Oct. 19, 24, 32*; Nov. 142*; Dec. 119*
UNIVERSITY-OWNED CAR: July 134

VALLEY RR: Mar. 119
VALVE GEAR: Jan. 80, Feb. 57; July 58; Aug. 48, 52*; Sept. 148; "conductor's valve" Dec. 77, percent of cutoff Dec. 79
VANDERBILT CMDR.: Jan. 28; July 31
VAN HORNE, SIR WM. C.: April 71*
VICTORY GARDENS: July 145
VIRGINIANS FRT. TRAIN: Jan. 131*

WABASH: Jan. 76*
WAGNER, WEBSTER: Jan. 81
WALKILL VALLEY: April 14*
WATER: May 134; June 59, 99*, 130*; July 57, overflow July 149, cool July 147; July 120*; Sept. 114*, 146; Oct. 102: true tale Dec. 113

WATERWAYS: Jan. 17*, 21, 24, 43*; tankers, July 11; Aug. 10; Dec. 103
WAYBILLS: Aug. 137; Oct. 90; Dec. 52
WEED-BURNER: Apr. 129
WEST JERSEY & SEASHORE: Mar. 126
WESTERN ALLEGHENY: PRR Dec. 80
WESTERN & ATLANTIC: Oct. 19
WESTERN MARYLAND: May 145; July 35*
WESTERN NORTH CAROLINA: Dec. 8
WESTERN NY & PENNA.: Sept. 161
WESTERN PACIFIC: Sept. 146; Oct. 27, poem 154; airplane wreck Dec. 6
WHEELING & LAKE ERIE: April 18, 42; Oct. 35; Dec. 79*
WHEELS: Mar. 45; Aug. 58; Sept. 149; Oct. 71, lost driver Oct. 140
WHISTLES: Jan. 8, 139; Feb. 132; Apr. 135*; May 137, 143; June 137; July 144, 155; Aug. 144; Sept. 145; Nov. 143, 144
WHITE, BOB: Mar. 69*
WHITE PASS & YUKON: July 130*
"WHITE TRAIN": Dec. 103, 104*
WHITNEY A. F.: "Featherbedding" July 146
WOOD RIVER BRANCH: Mar. 59*
WOODSTOCK: Mar. 58*; Oct. 34*; Nov. 146
WOOTTEN FIREBOXES: Oct. 14, 17*, 70*
WOMEN RAILROADERS: Jan. 42, 128; Feb. 98*, 140; Mar. 26*; May 143; man-wife crossing tender team June 117; July 65, 75, 141*; Aug. 77*; Sept. 143; Oct. 121*; Dec. 70*, 118*
WORK TRAINS: Jan. 119; Mar. 122
WRECKING CRANE: Feb. 57; July 152; Oct. 138*; Nov. 4*, *Big Hook* Nov. 8
WRECKS: CM Jan. 6, LIRR Jan. 28*, 29*, 30*; UP Feb. 72, D&RG Feb. 130, SR Feb. 134*, CM Feb. 132, C&NW Feb. 138; C&NW Mar. 27*, NC&StL Mar. 97, B&A Mar. 121; Big Four May 136; T&T June 51*, Erie June 56*, *Texas Rocket* June 56, GN June 137; NYC&HR July 39, cabooses July 141*, Franconia July 151, GN July 152, interurbans July 67*; GT Aug. 58*, SP Aug. 100, Erie Aug. 145; BR&P Sept. 18, NKP Sept. 39, D&N Sept. 115; circus Oct. 87, MeC Oct. 88; LV Nov. 18*, D&H Nov. 22, PRR Nov. 61*, B&O Nov. 21, SP Nov. 133*; WNC Dec. 13*, WNC Dec. 22; Pennsy, NYC Dec. 6, Milwaukee Dec. 55*, *Four-Train Wreck* Dec. 102; NYS&W Dec. 123, Franconia Dec. 129, McAlester Dec. 133*
WYOMING RY: Sept. 145

YARDS: LIRR Jan. 14*; C&NW Mar. 123*, Pennsy Mar. 126; Enola May 89, limits May 133; advice to switchmen June 126; Portsmouth and Mystic Jct. Aug. 57; Tucson Sept. 6, old print Sept. 17*, E. Salamanca Sept. 24*; Youngstown Oct. 94*, Hornell Oct. 132*, C&NW Nov. 68; airplane Dec. 6, Asheville Dec. 26*, 27*, *Best Friend of Charleston* Dec. 59; 92, 117
YAZOO & MISSISSIPPI: April 21*, 130
YMCA: Babahatchie Feb. 106
YOSEMITE VALLEY: Feb. 130
YOUNG RAILROADERS: May 6

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Index of Authors for 1943

YOU'LL find here the names of all our authors who appeared in 1943, with the month and page on which their work was published. The list includes the writers of articles, true tales, and fiction stories.

Alexander, E. P., May 148

Barnes, J. William, Dec, 102; Bedwell, Harry, Jan. 48, Aug. 135; Buehr, Walter, Sept. 79

Clodfelter, Frank, Dec. 108; Comstock, Henry B., Feb. 24; Covington, Stuart, Aug. 6

Dellinger, E. S., April 104; Drummond, Harry R., Mar. 82

Eversole, Elton M., May 62

Fawcett, Brian, April 8; Ferguson, F. W., June 81; Fisher, Charles E., Dec. 58; Fletcher, Frederick G., Oct. 92; Foss, R. B., Jan. 115; Fosse, Navarro, Aug. 80; Francisco, Don, Nov. 66; Freitas, Edward, June 98

Galloway, Joseph, Aug. 130; Gordon, Bennie, Dec. 92; Greve, Sig, Nov. 76; Gross, H. H., Sept. 102

Hart, Geo. M., Oct. 10; Holman, Ross L., June 8; Howland, Wayne, Nov. 116; Hubbard, Freeman H., Jan. 12, Mar. 6, May 8, July 8

Ijames, Russel K., Sept. 94; Ingells, Douglas, Mar. 110

James, Arthur C., Aug. 100; Jewell, Arthur R., Feb. 79; Johns, John, Mar. 28, June 24, July 46, Aug. 22, Oct. 36, Nov. 24; Johnson, R. P., June 52; Josserand, Peter, Sept. 130, Oct. 6, Nov. 6

Keenlyne, Theodore, Feb. 66; Keith, Homer, May 128; Knapke, Bill, April 63, Aug. 124

Lathrop, Carl, April 79, June 91; Lathrop, Gilbert, June 126, Sept. 44; Locke, Will H., Sept. 90

Maguire, Stephen D., Jan. 145, Feb. 142, Mar. 140, April 138, May 116, June 102, July 134, Aug. 113, Sept. 118, Oct. 112, Nov. 101, Dec. 146; McGuire, Paul, Jan. 112, July 86; Merrilees, Andrew A., Sept. 118, Nov. 101; Miller, Elmer F., June 70; Monroe, Herbert G., Feb. 106, July 102, Dec. 8; Mosler, B., May 94; Moore, Max J., Sept. 8; Morehead, Tal, Sept. 6

O'Brien, Tommy, Aug. 93 *(since deceased)*

Palmer, H. R., July 91; Palmer, LeRoy, Jan. 118, Feb. 119, July 72, Dec. 44; Parry, William J., Feb. 88, Aug. 62, Dec. 30; Pugh, Edmund, March 78

Roach, Charles Anthony ("Silent Slim"), Dec. 84

Samples, Ed., June 85; Sherwood, Leland, Oct. 150; Shutts, James R., Oct. 94; Sledge, James E., Dec. 113; Squires, Charles, April 72; Steffee, Donald M., Mar. 10

Thomas, Harry F., Aug. 8

Viswanath, N., Nov. 128; Voorheis, Ben. E., Jan. 107

Ward, B. F., May 74; Welch, David J., Sept. 83; White, A. A., Oct. 76; White, Bob, March 69; Williams, Charles X., Feb. 12

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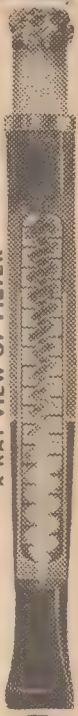

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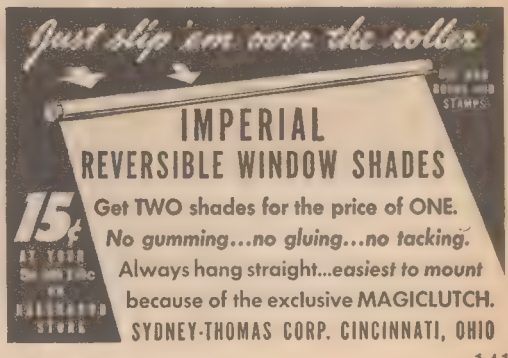
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(*)RAY B. COOPER, 4006 Potomac Ave., Chicago 51, wants metal, fiber, plastic and celluloid fare tokens. 1000 extras from large collection to trade or sell. Offers 100 diff. fare tokens for $10.

HARRY COTTERELL, Jr., 36 Alexander St., Newark 6, N. J., wants pix of old-time CNJ ferryboats incl. *Easton* and *Mauch Chunk*, built 1893, sold 1905.

JOHN DUNNICLIFF, 5056 Queen Ave. So., Minneapolis, Minn., will trade CStPM&O or IC tr. orders for those of PRR, UP, DM&IR, DT&I.

C. F. DURGIN, 10 Fairview Ave., Derry, N. H., trades B&M emp. tts. for those of your road.

Cpl. CHARLES FAIRBAIRN, 12005982, whose address is A.P.O. 724, c/o Postmaster, Seattle, Wash., wants pix of WP&Y.

(*)L. GAILLARD, Box 457, Summerville, S. C., sells 116 size trolley pix: conn. Co., LVT, AC&S, 10c or 3 for 25c. List free.

G. H. HARDY, 538-15th St., Oakland, Calif., buys tts., travel booklets, books, passes of any road.

(R)RICHARD S. HOLT, 59 Gilbert Rd., Belmont, Mass., will buy '41 and '42 *Railroad Magazine*, good cond. Also any size pix of Colo. steam roads and DM&N.

HERBERT HUBER, 1811 So. 17th St., Ft. Smith, Ark., trades emp. tts. for emp. mags., all roads, or will buy emp. mags. Write first.

(*)FRED JAMES, 33 No. 5th St., Easton, Pa., wants info. and list of pix of trolley cars, any size and color. Wants info. on idle trolley car eqpt., esp. names and addresses of companies having cars for sale.

PETER KECATOS, 614 Vanderbilt Ave., Brooklyn, N. Y., will give a clothbound book 6x9 inches, *Who's Who in Railroading*, for largest amount of pix, size 116 or larger of LIRR, Pennsy, NYNH&H. Write for info.

Pvt. FRED R. KERN, ASN 33504889, (Q) A.R.O., 860, c/o Postmaster, N. Y. City, wants to buy 116 size pix and negs. of Pennsy steam power. Pennsy fans, write.

ROBERT KERN, 6131 Crenshaw, Los Angeles 43, Calif., will buy R&LHS book, *Locos of the SP*, by G. M. Best.

(R)G. B. KRUSCHKE, 1200 Clearwater Road, Largo, Fla., wants *Railroad Magazine* from Jan. '30 to Feb. '43.

(*)JOE LAU, 1805 Chelsea Rd., Baltimore, 16, Md., wants st. car wreck pix and negs.

(*)ARTHUR W. LEE, 1259 Jackson Ave., Lakewood 7, O., has 2 pix of street RPO cars, 2 interior and two exterior views (only fair), 10c ea.

(*)FRED LEVIN, 11-E-Delaware Pl., Chicago, 11, wants negs, any size, of trolley lines in U. S., Canada.

(R*)ERNEST L. LINT, 10 Woodside St., Salem, Mass., wants pix of std. g. and n.g. engines and trains; elec. cars. *Off. Guides;* old issues *Railroad Magazine.*

KLINE LUMBERT, Box 1528, Westwood, Calif., wants p.c. pix of MKT, 2-8-2 type 910, 911, 914; SAL 2-10-0 type 530, 532, 533; SAL 2-8-2 type 410, 412, 420; D&H 2-8-0 type 1120—1200; Canadian National 4-8-2 type 6010, 6011, 6014; DWP 2-8-2 type 3000 series; Rutland 2-8-2 type 3234 series.

FRANK McBRIDE, 602 East 5th St., Muscatine, Iowa, wants to contact collectors living near him.

W. E. McPEAKE, 230 Spring St., Jonesboro, Tenn., will trade or sell SR, N&W, ETWNC and Clinchfield pix 616 or p.c. size; SR fans, write.

(R)RAYMOND MILLER, 4226 N. 15th St., Philadelphia, 40, Pa., wants *Railroad Magazines* before '40; state price.

Railroad Camera Club

Pvt. TOM MULANIFF, 32921006, Co. C., 745th Rury Opr. Br., Camp Thomas A. Scott, Ft. Wayne, Ind., would like to hear from former fans; also will buy or trade tr. orders for any size NYC pix or neg.

(R) PAUL J. PATRICK, 4549 South Pine, Milwaukee 7, Wis., will sell *Railroad Magazine,* Feb. '34, Oct. '34 thru Feb. '37, Jan. '40 and Dec. '42, good cond., for $10, or will trade for pix. Write first.

HAROLD L. PHILLIPS, Box 241, Millis, Mass., will sell March '42 *Off. Guide,* good cond., 30c postpaid.

(*) Pfc. WARREN RINGAL, ASN 18031856, APO 525, c/o Postmaster, N. Y. City, will buy pix of PE 4505, IC old inter., Key System streamliner, San Francisco Mkt. St. and Municipal Ry., Calif. St. Cable RR, Tulsa, Okla., Sand Springs Ry., Okla. City Ry. Co.

(R) JIM ROWLAND, 978 9th Ave. S., St. Petersburg 7, Fla., trades SAL tr. orders for those of other roads, esp. ACL Soo, and PRR. Wants May '35 *Railroad Magazine.*

CLINTON SANDERFER, 3036 10th Ave., Port Arthur, Texas, wants map and eng. pix, size 116; also MOP emp. tts. and MOP pin or SP pin. Write first.

Lt. JOHN B. SCOTT, QMC, 7029 19th Ave., N. E., Seattle 5, Wash., wants negs., pix, tts., tr. orders, switch lists or tkts. of D&RG, before '10 or negs. and pix after '10.

(R) J. C. SENDERAK, 2619 Cortez St., Chicago 22, will sell *Railroad Magazines,* Jan. '37 to Jan. '42, good cond., 50 engine pix, 20 engine negs., and 50 assorted tts. No list. Make offer.

(*) J. C. STEIN, 154 East Exchange St., Akron 4, O., will buy Lake Shore Elec. Ry. negs., size 116 or 616. If excellent cond., 50c ea.

GEO. J. STRECKERT, Rte. 4, Box 29C., Chilton, Wis., will buy size 116 negs. of C&NW depots from Hastings to Linwood, Neb., 15c ea.

(*) W. K. STROMAN, Box 3112, Miami 20, Fla., will trade 10 diff. bus and st. cars tokens for 10 of yours.

(R*) WALTER SULLIVAN, 1663 E. Kelly St., Indianapolis, Ind., will sell *Railroad Magazines,* good cond., May, June, July, Sept., Nov. '40; Jan., April, June, Sept., Oct., Nov., Dec. '41; Jan., Feb., Mar. '42. Wants tr. orders and clearance cards of NYC, Pennsy, Monon, CI&L; rulebooks of NYC, Indpls. Union, Monon, and emp. tts. and transfers of Indpls. Union and Indpls. Elec.

(R) WM. SURDYK, 11408 Rosedale Ct., Cleveland 6, O., wants *Railroad Magazine,* April, Nov., Dec., '34; June '35. All '29, all '30, all '31, and Dec. '33, good cond. Will pay cash plus postage.

Pvt. LESTER E. WELCH, 37453142, Co. F. 14th Inf., A. P. O. 360, Camp Carson, Colo., wants RR circus pix, size 116; also route cards.

(*) EVERETT A. WHITE, U. S. Govt. Camp, Mancos, Colo., sells pix of D&RGW, RGS n.g., Boston El, B&QT, Chicago El; Worcester, Mass.; Denver Tramways. All pix 10c ea., 3 for 25c, size 616.

Pvt. W. W. WILSON, Co. B 472 Inf. Guards, Fort Brady, Sault Ste. Marie, Mich., wants latest *Ry. Eqpt. Register.*

(R) WM. WENZINGER, 122 Shortsman Ave., Freeport, Long Island, N. Y., will sell *Railroad Magazines:* Nov. Dec. '38; March, Sept., Nov. '39; all '40 exc. Aug., Nov.; all '41 exc. Aug., Sept.; all of '42.

M. O. WISEMAN, 1202 Hampshire St., San Francisco, wants good pix of SP Mallets, class AC-3 or older types.

L. C. YEATS, R168732. FW, RCAF Station, C.A.P.O. 4, Newfoundland, will send free, size 116 pix of Newfoundland n.g. freight loco to anyone sending list of CPR pix for sale or trade.

(R*) H. L. YOUNGER, R.F.D. 1, Harbor Creek, Pa., will trade June '43 *Railroad Magazine* for best offer of 116 size clear steam negs. Write first. Will trade U.S.A. and Canadian roads, 116 size pix for same size of TH&B 4-6-2 type Newfoundland Ry. n.g. List and sample 5c ea. Steam and elec. pix 116 size, 11 for 50c.

Model Trading Post

LISTINGS here are free. Keep 'em short. Because of time required to edit, print and distribute *Railroad Magazine,* all departmental material should be sent to the editor seven weeks before publication date.

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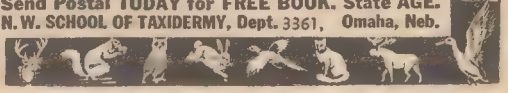

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Every *Trading Post* entry must be accompanied by the latest Reader's Choice coupon, clipped from page 145 or home-made.

M. D. BELL, 169 N. Whitesboro St., Galesburg, Ill., will sell AF 3/16 in. scale pass. train, AF ¼ in. *Hiawatha* pass. train, 100 watt trsfrs., two 50 watt trsfrs., two manual switches, one section r.c. track, 50 secs. str. and curved track. All good cond. Both trains remote control.

EDGAR V. BLUMHOF, 909 N. W. 34th St., Oklahoma City, Okla., will trade *Boy's Life Magazine* '28, '29, '30 and some issues of '27 for scale or tinplate eqpt.

H. BUCKLER, 227 Oak St., Oberlin, O., will sell O gage Lionel and other locos, trucks, rails, type V 150 watt transf., etc., good cond. Send stamped env. for list.

KENNETH CASFORD, 5024 Woodland, Kansas City, Mo., offers 4 prs. Lionel tinplate trucks 70c ea., all $2.50.

K. E. CRANE, 720 Governor St., Chippewa Falls, Wis., will sell unused O gage ¼ in. scale track material, switches, car kits, bridge and structure kits, tools, misc. parts, also some tinplate items. Send stamp for list.

BARTON E. CROSBY, New Castle, Dela., wants Lionel cattle car 2656 with elec, couplers, good cond. Reply airmail, spec. del.; will reimburse.

GENE FLANAGAN, 4309A Blair Ave., St. Louis, Mo., will buy HO gage 0-6-0 or 0-4-0 switcher, AC current. Also HO loco motor, AC.

ERIC FLEMING, Box 450, R.F.D. 5, New Brunswick, N. J., wants snapshot of O gage road, also Lionel *Flying Yankee*, whistle not nec., AF locos 436, 431, AF *Hiawatha* or UP motorcar, tinplate trucks.

CHAS. K. GIVEN, 3411 Brunswick Ave., Drexel Hill, Pa., will sell HO inter., kit $3; built-up model $5.35. List for 6c, many diff. prototypes.

J. B. HERRON, Shippers Car Line Corp., 30 Church St., N. Y. City 7, offers 56 ft O gage solid rail double track, inside 3rd rail on wood ties and ballasted track board, with 4 hand switches and two Lionel solid rail r.c. switches, in 2- and 4-ft. secs., and Lionel 250 watt transf.; all for $40 plus postage.

ROBT. HOLST, 7314 Ridge Ave., Chicago 45, will sell or trade 70 ft. of brass HO rail, ten 2-rail Varney HO Dalman frt. trucks, 6 crude HO frt. cars. Will buy oldest *Loco. Encyclopedia* he can get.

ADOLF KATZE, 1324 Carroll St., Brooklyn, N. Y., will sell Lionel tinplate std. gage, 2 engines 390-E and 384, coal tender, coal car, boxcar, caboose, 2 coaches, 2 crossovers, str. and curved track. Will trade for man-size bike.

LOUIS KATZIANER, 32 Jubilee St., New Britain, Conn., will trade Marx train, loco, hopper car, flatcar loaded with lumber, frt. car, caboose, all scale, lettered New Haven. Make offer.

LUKE H. KEAENS, 22 Mineral St., Springfield, Vt., wants AF 3/16 in. scale trucks compl. with auto. couplers; write first.

STEPHEN KOSTELNY, Jr., 5619 Ainslie St., Chicago, will buy AF 680, 681 tracks; 665 switches or 688, 675 r.c. uncouplers; 494, 495L, 496L cars; 561 loco; 4113 switcher, all good cond.

ARTHUR F. LEFFEL, 48 32 205th St., Bayside, Long Island, N. Y., will buy AF complete HO train set with transf., etc., as listed in catalog, either frt. or pass. set. Write price, cond.

A. PROVANCHER, 5811 N. E. Garfield Ave., Portland 11, Ore., will trade pr. Lionel 731 steel switcher without control levers for Lionel 022 or 711 r.c. switcher complete with control levers.

DONALD PUERLING, 5823 W. Appleton Ave., Milwaukee 10, Wis., wants stamped metal streamliner, body only, any road. Paint cond. immaterial. but no dents. At least 16 in. long. Cash, or Milwaukee current Rule Book, or other items.

JOHN REBENAR, 265 Clinton St., Binghamton, N. Y., will trade new 381-E. Lionel loco for 400-E.

LAWRENCE VAN TAK, Pere Marquette baggage agent, Holland, Mich., Rte. 3, will sell 10 frt. cars in 650 series, 4 pass. cars in 600 series; all Lionel, good cond.

H. L. WAHL, U.S.C.G., Box 959, (c/o U.S., Coast Guard) Marshfield, Ore., will trade 6 Lionel O gage 4-wh. trucks, now on pass. cars 607, 608, for Marx 4-wh. trucks with auto. couplers suitable for Marx cars of 3550 series. Will buy Marx r.c. switches, 3550 series cars, Lionel whistle station, 45 degree crossovers, str. and curved track, Marx uncoupler track.

HENRY H. WILTBANK, 3009 N. Percy St., Philadelphia 33, Pa., wants 027 and std. gage track tinplate catalogs before '39; *Miniature Railroading*, and *Model Craftsman*. Will buy, or has HO eqpt. to trade.

Reader's Choice Coupon

Stories, features and department I like best in the January '44 issue are:

1.....

2.....

3.....

4.....

5.....

6.....

Best photo is on page.....

Name .....

Occupation .....

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Is stamped envelope enclosed for Railroad Camera Club Pin and membership card?.....

Railroad Magazine, 205 E. 42 St., New York City 17

The Callboard

DESPITE the war, a lively Canadian group known as the Lakeshore Railway Club has just been formed, mostly for 'teen-age youths living at Pointe Claire, Que., under the guidance of Robert R. Brown, 700 St. Catherine St., W., Montreal.

"We have a keen bunch of fans," Mr. Brown writes, "but photographic supplies are scarce these days. If the scarcity gets any worse we may have to give up temporarily the trading and selling of pictures. Incidentally, Canada's first-class mail rate to U.S. is now 4c the first ounce, 2c each additional ounce.

* * *

SHORT-LINE FANS are expected to turn out in large numbers to hear an interesting talk by D. L. Tilly, president of the New York Dock Ry. and director of the American Short Line RR. Ass'n, Eastern Region, at a meeting of the Railroad Enthusiasts, N.Y. Div., to be held 8 p.m. Friday, December 17th, in Grand Central Bldg., N.Y. City, room 2728. The public is invited. D&RGW movies will be shown, including the Royal Gorge and Moffat Tunnel.

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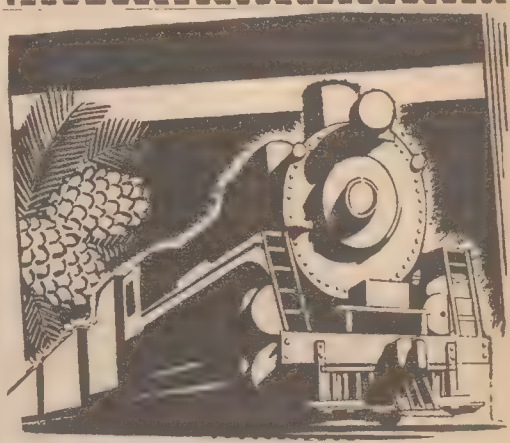

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